# The Iron Ag

## A Review of the Hardware, Iron and Metal Trades.

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and wasted. After having selected the best place for the coke ovens, 12 feet in diameter and 6 feet 6 inches high, set in double line, was at once commenced. Although the slack coal of the Rochester mine is not very dirty, vet it was deemed necessary to crush and prepare the coal previous to sending it to the ovens. A careful investigation into the different apparatus in use for separating coal from their impurities by the general manager of the works, Mr. Fr. A. Bell, resulted in a decision in favor of the Stutz washer, and a contract

The average amount of impurities washed

### METALLURGICAL NOTES.

A MATERIAL FOR BASIC LININGS.

Dr. L. Erdmenger, whose claims in connection with the basic lining of Bessemer at least two bins for storage. Thus the dripping of the water from one goes on while the opinion in the Deutsche Töpfer u-Ziegler the other is being filled.

The average amount of impurities washed

The average amount of impurities washed to basic fining of person of the total carbon, the annealing being effected by the opinion in the Deutsche Töpfer u-Ziegler medium of coal, the co-operation of an oxidizing agent not being indispensable to the depth of the canal by raising the boats must be able to carry larger ear-carbon, the annealing being effected by the opinion in the Deutsche Töpfer u-Ziegler and to bring this about we should make the canal deeper. If one foot of water the basic fining of the basic fining of the basic fining of the basic fining of carry larger ear-carbon, the annealing being effected by the goes, and to bring this about we should oxidizing agent not being indispensable to the depth of the canal by raising the basic fining of the

The Stutz Coal Washing Plant at the Rochester Mine.

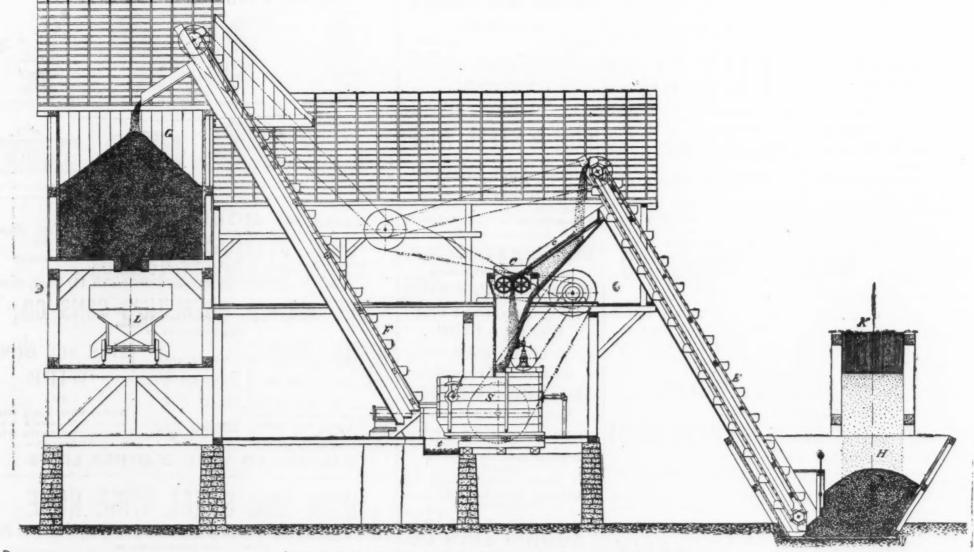
The Rochester mine, located a short distance southwest of the town of Dubois, Constitute the crusher C. By delivering the fine material directly into the washer, the crusher is greatly relieved and much unnecessary power saved. The jig S has two firm decided to start in the coke business, in order to get rid of their surplus of smile cond, of which a great part had to be dumped and wasted. After having selected the best and a surplus of the coke of the coke of the consellation, but in reality it is more complished in time to offset the advantages which the British will gain from the shown a sample of the coke from the washer had closer the coke of the Connellation. We have been shown a sample of the coke from the washer had close the constitute the crusher: is greatly relieved and much unnecessary power saved. The jig S has two firm decided to start in the coke business, in order to get rid of their surplus of smile contained in the slack, of their surplus of smile contained in the slack and nature of the impurities contained in the slack and nature of the impurities contained in the slack expands of the coke exceeded expectations.

The Rochester Mine.

The Rochester Mine, located a short distance southwest of the town of Dubois, account of the coke of the Connellation, but in reality it is more complicated, inasmuch as it results from the superposition of two distinct chemical actions. A proportion of manganese, even believe 5-1000's, gradually arrests the softening process until it ceases altogether. The pig, of course, continues to lose carbon by solved the firm of five hours, made by six the continue to the Clearfield district.

During a trial of five hours, made by six the five the colle waters of the waters of the six the five the five the five the five the five the colle waters of the colle waters of the colle waters of the collent of five hours, is made. We have been clearly distinct chemical actions. A proportion of manganese, even below 5-1000's, gr ing facts, as elicited in the course of his ex-

as the great channels of commerce of our country. That large vessels can carry their cargoes cheaper than small ones is seen by the fact that vessels carry grain from Chicago to Buffalo for one-half the cost of carang facts, as elicited in the course of his experiments: (1) Pig iron which is truly malleable always contains graphite; (2) pig may lose carbon, and yet remain brittle if graphite be not formed, or if the quantity existing before the annealing process be not augmented; (3) pig may become malleable without losing a sensible portion of its total carbon, the annealing beginning to the process of the process of



. THE STUTZ COAL-WASHING PLANT AT THE ROCHESTER MINE, CLEARFIELD COUNTY, PA.

different machines and their arrangement. out by the difference in the specific gravity The building is 37 x 28 feet, and about 30 of coal, slate, iron pyrites, &c., the momen-The building is 37 x 28 feet, and about 30 of coal, slate, iron pyrites, &c., the momenteet high, including 8 feet of wall above rail and below the floor. It is set along the main the lighter part, on top, while the slate and track, and close to the coal shute, in order pyrites &c., settle upon the sieve and reach to save all the unnecessary handling of the coal. Two coal bins, 14 x 12.5 feet inside and 15 feet high, holding about 70 tons each, is continuous in its working, coal and impuricomplete the structure. Owing to the unties being delivered by the machine itself. usual hight between the top of the coke ovens and the stack hopper H, it became plunger, provision being made for suitable necessary to raise the first floor about 8 feet, an equal length of elevators, and a better an equal length of elevators, and a better which, in other machines, passes through working thereof being thus assured. The the meshes of the sieve and is wasted. The amount of water required is very understood from the engraving. K is the large screw of the coal shute, over which the mine cars are dumped. Lump and aut coal are sent to the market, while the small coal, below 34 inch in size, passes through the meshes of the screw into the

the outside through a special opening. It will plunger, provision being made for suitable valves. Thus the very fine coal is saved

was accordingly made with Mr. S. Stutz, engineer, Pittaburgh, in April, and three months later the machinery was ready for operation. It was started at the beginning of August, and is reported to be doing its work very satisfactorily. In the accompany- acceptance were represent a vertical longitudinal section of the plant, showing the difference in the machinery machines and the boiler. The separation is carried of the months later the machinery was ready for during the regular working about 140 gallons per work very satisfactorily. In the accompany- and the boiler. The separation is carried of the fact that some very interesting experiments have been made at Czernowitz, improved by annealing. His tests on steel during the regular working about 140 gallons per minute, or about 14 gallons per work very satisfactorily. In the accompany- and the boiler. The separation is carried of the fact that some very interesting experiments have been made at Czernowitz, improved by annealing. His tests on steel tween the size of the boat and the in them wrought iron was melted without phous graphite and its greater tenacity, and injury to them. Experiments on a larger | from the former by its feeble extensions and scale are contemplated.

### MALLEABLE CAST IRON.

In a paper read by M. Fourquegneon be fore the French Academy of Sciences or malleable cast iron, he states that, as a bar softens, one observes throughout the mass an abundant deposit of amorphous graphite. Matters stand thus when the bar lies in an nert mass, as in anthracite coal; but when the pig iron comes in contact with a substance capable of burning or absorbing the carbon, a secondary reaction sets in. The liberated carbon having disappeared from the super-ficial zone, the equilibrium determined by the heat undergoes a slight change.

its large proportion of graphite.

### The Erie Canal.

The growing importance of the Erie Canal as a highway for Western produce— Jersey on the Delaware and Raritan Canal the recommendation contained in the annual allow boatmen to make another trip a report of Horatio Seymour, Jr., State Engison. There is no sentiment in trade. views as follows

ing the canal recommends itself to from the former by its feeble extensions and its large proportion of graphite.

boatmen, because it requires no outlay on their part, the boats now in use having a capacity for 50 tons more than the present depth allows them to carry. If no addi-tional load was carried this increase of depth, with the application of power to the locks for operating the gates and drawing Jersey on the Delaware and Raritan Canal, would enable boats to make 37 hours better the total tonnage making 6,462,290 tons in 1880—and the threatened competition of the Welland Canal, give exceptional interest to eer and Surveyer, who summarizes his less goes where it can be done the cheap-iews as follows: We should see first how est, and the route that can carry for a few we can cheapen transportation by the Amermills less per bushel than any other will
ican water route, consisting of the great command it. The average freight (not inthe mine cars are dumped. Lump and aut coal are sent to the market, while the small coal, below % inch in size, passes through the meshes of the screw into the hopper H. By means of the elevators, are run by an engine of E, the material is taken up and delivered upon the shute c. The latter is formed of a screw of about 5-16th inch mesh of the particles, already small enough, pass directly into the water or separator. All larger pieces go to the crusher and a boy, paid as follows:

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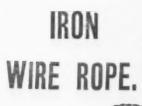
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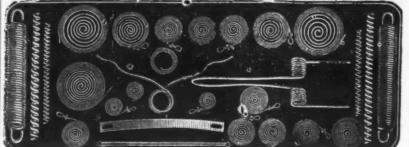
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ing, boxes or molding flasks are used for giving the sand an external support while tact with the flask.

the mold is being formed. Molding flasks Although the copes are always made of

Papers on Practical Founding.—XV.

BY EDWARD KIRK.

BY ED vents the molten metal from coming in con-

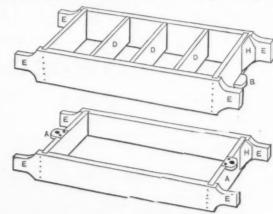
are made of wood or cast iron, according to wood, and the copes and drags are all of the



Practical Founding.-Figs. 19 and 20.-Stove Flask, Eastern Style.

ding the flasks are made of hard pine wood, so that they may be light and easy to handle, and for ordinary plate they are divided into two parts—a cope and drag—as shown in Figs. 19 and 20, which represent a stove foundry flask ready for molding. Fig. 19 represents the drag or lower part of the flask, A A A being the pin plates into which the pins on the cope are fitted when the two parts are put together. For ordinary flat plate this part of the flask is made 3

the fancy of the founder or the nature of the work, and they are of any shape or size best suited for the casting to be made in them. These flasks are merely wooden or metal frames or boxes, having neither tops nor bottoms, and are divided into two or more pieces to suit the shape of the casting. The typ part of the flask is called the cope and the bottom part the drag, and when a flask is divided into three parts, the middle part is called the cheek piece. These parts are each fitted with pins or plates to hold them in their proper position when the mold is being made, and to serve asguides when the flask is lifted off or closed. For stove founding the flasks are made of hard pine wood, so that they may be light and easy to handle, the fancy of the founder or the nature of | same hight throughout the country, there



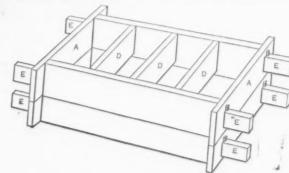
Practical Founding.-Figs. 21 and 22.-Store Flask, Western Style.

the sand can be evenly rammed upon the pattern under them. Nails are often driven into the lower edges of the bars for the purpose of supporting the sand and giving it more bearing upon them. E E represent the handles on each end of the cope for lifting off or closing the flask. In some foundries these handles are also put on the drag for convenience when shaking out the castings. Both cope and drag are made of 1½-inch lumber, and the flask is dovetailed.

inches deep and of any length or breadth to suit the pattern.

In Fig. 20 is shown the cope or top part of the flask. For ordinary flat plates it is made 4 inches deep, and of the same length and breadth as the drag. B represents the pin used for holding the cope in its proper place upon the drag, and serving as a guide when the cope is closed upon the drag. The copes of large flasks are furnished with three of these pins, two on one end and one on the other. O O O represent cross bars for holding the sand and preventing it from falling out when the cope is lifted off the drag, and slow of the flask by the pressure of the moleon metal in the mold. These bars are made of 1-inch lumber, are put into the cope is the second on the congrable beyond the end pieces. A corner block (H) is put in each corner of the cope and drag, and outside of these corner blocks essent the side pieces are trimmed down to form the handles E. In Cincinnati and many other places in the West these cope and drag, as shown in Figs. 21 and 22; but at Pittsburgh and some other places no handles are put on the drag, and the side pieces are only allowed to project far enough beyond the end pieces. inches deep and of any length or breadth to together by mortising the ends into the suit the pattern. made of 1-inch lumber, are put into the cope about 6 inches apart, and are firmly naited to it. They extend from the top of the cope to within half an inch of the pattern, and their lower edges are chamfered off so that tops, they are put on the inside of the flask

inch lumber, and the flask is dovetailed are handier and easier to lift off and close.



Practical Founding .- Fig. 23 .- Old Style Store Flask.

together and thoroughly nailed through the | A cope made in this style can be handled by together and thoroughly nailed through the dovetails, both ways, in order to prevent any springing or working of the flask, for the least looseness or springing in the cope causes the sind to fall out of it when the flask is lifted off or closed, and destroys the mold. The lumber used for making flasks is never planed on the inside, for the rougher it is the better the sand adheres to it, and the least risk there is of the mold being destroyed by the sand falling out of the cope.

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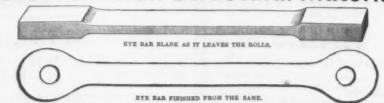
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more than a mere outline of the vast mineral
wealth of this region. It is certain, however, that it is only a matter of time for
Utah to equal any other iro manufacturing
district on this continent, or any other in
the world. The principal deposits are in
Iron County, but between these points there
are large quantities of ore. The kinds found
are the magnetic, specular, red hepositics

hinging all his large flasks. This enables the molder to lift the cope with perfect steadiness and without any assistance from his partner. The Pittsburgh and Cincinnati flasks can be lifted more steadily than the Albany and Troy flasks, and are a great deal handier and easier to shake out. These are the only advantages they have over the other style of flasks. No hinges are ever used on them, and an Eastern molder dislikes to work with them, because he loses so much time helping and waiting for his partner to help him lift off and close the molds. For this reason a molder cannot put up so many molds with the Western as with the Eastern flask. The expense of making the flasks is about the same when they are made entirely by hand, but when the dovetails are cut by machinery, as they are in almost all the large Eastern stove foundries, the East-ern or dovetailed flask is much the cheaper to make and lasts as long as the other

In Fig. 23 is shown another style of flask used for stove founding. It is put together without nails, and is generally made of some hard wood, such as oak or hickory. The end pieces A A are cut 5 or 6 inches longer than the width of the flask, so that they will project 2½ or 3 inches beyond the side pieces on either side. The end pieces are mortised, either side. The end pieces are mortised, and the ends of the side pieces are tenoned and made to project far enough through the end pieces to form the handle E on the drag and cope as shown, and the flask is held together by wooden pins which are driven through the handles E close against the end pieces A A. Flasks put together in this way are very good and stiff when made of oak or hickory lumber, but they take up a great deal of room in the foundry, for they cannobe set close together on account of the projecting end pieces, and they are very hard to shake out. They are, therefore, never used for stove founding, except in localities Bankers and Railway Commission Merchants, where it is difficult to get any but oak or hickory lumber, and where nails are not easily obtained. Hard lumber should never be used for stove flasks, for it twists and warps so that it is impossible to keep the cope so that it will fit solidly upon the drag, and the sides and ends of the cope become so hard from the heat of the sand that it is almost impossible to drive a pail through them. hard from the heat of the sand that it is almost impossible to drive a nail through them to nail in a cross-bar or secure the corners of the flask in case they become loose. The lumber generally used for stove flasks is pine and poplar. Flasks made of either of these woods are light and easy to handle, and will last as long as flasks made of harder woods. harder woods.

Norg.—In some parts of this country the lower portion of a flask is called the drag, and in others the newel; but drag is the proper name for it, and that most commonly used in this country and in England. Newel is a new name given to it by the New England Yankees, and is only used through the New England States or those border-ing on them.

Iron Ore and Coal in Utah.

Mr. J. Blodget Britton, the well-known chemist, has furnished us with some valuable chemist, has furnished us with some valuable information concerning the iron ore and coal resources of Utah, having been employed by various persons to make analyses of samples of ores and fuels found in that Territory. The following table, furnished by him, shows the results of analyses of five samples of massive magnetic iron ore which he received from Utah:

66.96 64.53 68.89 67.48 52.18 detallic iron ..... Oxygen with the 25.77 25.06 26.74 26.19 20.16 Phosphoric acid... trace .44 .20 trace trace .30

A sample of limestone from the same place as also analyzed by Mr. Britton with the following result :

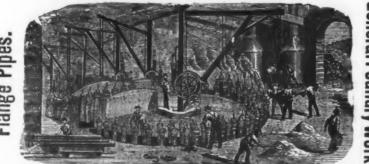
arbonate of protoxide of iron unsought matter and loss

The ores were labeled respectively: No The ores were labeled respectively: No. 1, "Duncan Ledge;" No. 2, "Blow Out Mountain;" No. 3, "Pot Metal Mountain;" No. 4, "Chesapeake Mountain," and No. 5, "Brown." The limestone was labeled "Utah Limestone." From the letter to Mr. Britton accompanying the samples the following is extracted:

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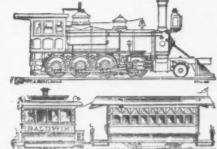
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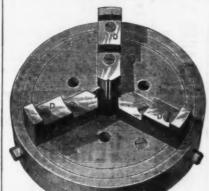


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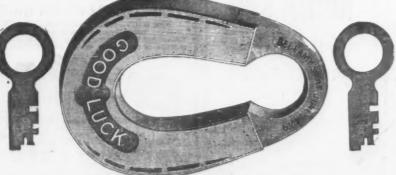
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97 per cent., and of sulphur from .29 to 1.03 per cent. Both bituminous coal and anthracite coal are stated to exist in seams of great thickness in the southern part of the Territory. All the elements necessary for the manufacture of iron therefore exist in abundance in Utah, and the wonderful pro-gress of that section of the United States in gress of that section of the United States in recent years causes us to believe that these resources will not be permitted long to remain undeveloped. In fact, even now a charcoal blast furnace stands practically completed at Ogden which will soon be in operation, and a rolling mill is in course of erection alongside of it.—Bulletin Iron and Steel Association.

the

pipe ore, &c., and are variously rich, yielding from a low per cent. up to 68 of metallic an inch thick, dressed to a half-round on the iron."

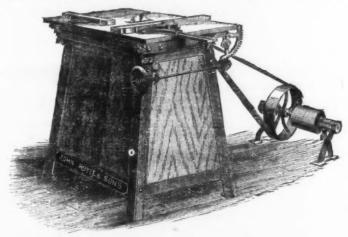
Mr. Britton has exhibited to us some samples of coke produced from coal of the character found in Utah. They were hard, and in quality seemed to be equal to the average of the kind produced from the bituminous coals the kind produced from the bituminous coals of Wastern Pennsylvania. Analyses showed

### The Hudson River Tunnel.

Now that the Hudson River Tunnel enterof the disaster in July last, and work is again being prosecuted with renewed vigor, a description of the obstacles overcome and the present modified system recent years causes us to believe that these resources will not be permitted long to remain undeveloped. In fact, even now a charcoal blast furnace stands practically completed at Ogdeu which will soon be in operation, and a rolling mill is in course of erection alongside of it.—Bulletin Iron and Steet Association.

Improved Circular Sawlug Machine.

The illustration given herewith represents an impreved circular sawing machine being manufactured by John Royle & Sons, Paterson, N. J. This machine is provided with some very convenient devices, which render it specially desirable for jobbing purposes and fine accurate sawing. The top, which is 3 x 2 feet, is attached to the front of the machine being raised for the purpose of changing saws, raised for the purpose of changing saws, pleted structure near it, unable to resist the



IMPROVED CIRCULAR SAWING MACHINE.

closely-fitting sawdust drawer, which constitutes a neat and cleanly arrangement. There are a number of other good features about this machine which will be at once recognized upon examination.

### Improved Door Hanger.

Contrivances for hanging sliding doors from above, instead of placing the rail on the floor and having sheaves or rollers mortised into the lower rail, are distinctively mortised into the lower rail, are distinctively American, and, if we mistake not, had their origin in the City of Philadelphia. The advantages of hanging a door from above are several. There is required less guiding fixtures, and, accordingly, less friction is encounted and less force is required to operate the door. Hanging a door from the top



guide on the floor, and therefore permits the carpet to extend through from one room to the other without break. The sheave illustrated shows one style of an improvement in articles of this kind, introduced by J. B. Shannon & Sons, of 1009 Market street, Philadelphia. The parts are so clearly shown in the engraving that an extended description is unnecessary. The method of attaching the door is similar to that employed in connection with hand rails. The support on which the sheave runs is a wrought-

throat pieces, &c. The table may also be raised and lowered for sawing purposes by means of the worm and wheel shown at the side of the machine. In the top are planed V grooves, for guiding the cross slide and ripping gauge. The ripping gauge is furnished with an adjustable iron fence, in which is arranged a convenient attachable device for securing gauges of various shapes and for special work. The top is also provided with a brace so arranged that it is securely held in position after being raised. The machine is fitted up in what may be described as cabinet style, with a spacious closely-fitting sawdust drawer, which condirect communication with the river, so that direct pumping had to be promptly abandoned. The next move was to sink a cofferdam through the ground over the break, but on reaching a depth of 15 feet, further progress was checked by the growing inflow of water, and it was decided to sink a caisson within the coffer-dam. This structure, probably the most remarkable in some respects ever used, was designed by Mr. Andersen, the superintendent of the work.

With the aid of the caisson the break was

the superintendent of the work.

With the aid of the caisson the break was successfully reached, the wreck cleared, and the work of reconstruction begun by making a connection with the old air-lock, which was done by working from the air-lock. The next step was to reach the finished invert and to carry up the masonry to the level of the lower edge of the caisson. This work required the utmost skill and care, and was successfully performed in small sections, thus securing the northern and southern sides of the caisson. Bulkheads were then put in to cover the openings of the two tunnels at the east side of the caisson and the western side near the shaft. The whole of the lower part of the double tunnel under of the lower part of the double tunnel under the caisson was then finished, and a solid wall of 4 feet of masonry built up within the caisson on the western or shaft side. The arch was then sprung within the caisson, and thus the entire junction section secured.

The problem which then presented itself was to reopen the tunnels, and particularly the south one, which it was feared night have suffered severe damage from the break, have suffered severe damage from the break, as only 12 feet had been actually completed. This was accomplished in an ingenious and simple manner, devised by Mr. Andersen. The tunnel was full of water, which, it was well known, was in direct communication with the river. Mr. Andersen, by degrees, put in a small pipe fitted with a valve. The end of this pipe was placed into a pulp of silt and water, which, upon opening of the valve, was forced into the space behind the caisson by the compressed air. When no more could be put through in this way, it, was stuffed in in balls by means of a ramrod. This system was persevered in, gradually using a larger orifice, until the south tunnel was filled with a mass of silt capable of resisting the air mass of silt capable of resisting the air pressure, so that work could be prosecuted in it. This was done by commencing a six-foot circular tunnel, in the upper half of which a movable timber bulkhead was forced forward by two hydraulic jacks, operating against two heavy guided timbers.

From the lower uncovered half of this small From the lower uncovered half of this small tunnel (along the crown of the completed south tunnel) the silt was gradually removed as the bulkhead advanced As soon as possible each completed section was secured by an iron ring. This was continued until the end of the completed masonry guide on the floor, and therefore permits the guide on the floor, and therefore permits the taken along the existing iron rings. At the

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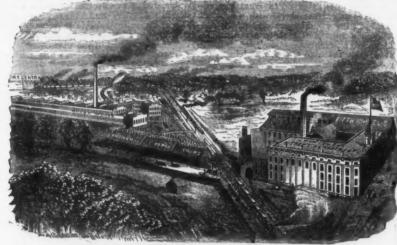


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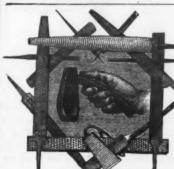
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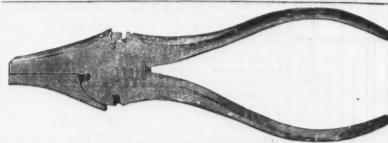
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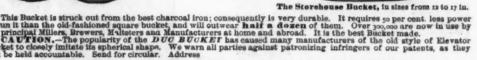


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formerly, a central advance heading or pilot tunnel is driven, and is kept ahead of the main-tunnel workings by about to feet, although no attempt appears to be made to keep it exactly in the center. This central pilot tunnel has a diameter of 6 feet, and two men working in it can always the table at the presence of the center. vance it at a rate very much greater than than that of the main tunnel. The men dig out 4½ feet, and then put in the first of the ten rings of 3/5-inch iron plates, which are bolted together and to the preceding ring. The plates are strengthened by angle-iron flanges. In the radial and longitudinal joints of the plates wrought iron plates are titted, the function of the radial plates being to strengthen the structure and to prevent any longitudinal displacement of the tunnel, while the radial plates are used as abutments for the bracing of the main tunnel. The latter is advanced, as formerly, by driving ahead first a heading in the top 4½ feet, putting in ¾-inch iron plates as soon as possible, enlarging gradually to full section, and closing the iron ring as rapidly as possible. As soon as put in, every iron plate is braced by a K 6 inch timbers against the outer surface. soon as put in, every iron plate is braced by 4 x 6 inch timbers against the outer surface of the pilot tunnel. When thus a 10-foot section of iron rings is completed, the masonry lining is at once begun and the arch keyed as rapidly as possible. The whole work is followed so quickly, from the first opening in the pilot tunnel to the completed arched masonry, that all the operations are carried on in a 50-foot section. As the rate of advance is now about 5 feet per day, the final structure is completed in about ten days after the first shovelful of silt has been dug out. The importance of this fact cannot be overestimated. Rapidity of work is the essential feature of all tunneling in treacherous ground. Experience in a great is the essential feature of all tunneling in treacherous ground. Experience in a great number of works of this kind has amply proved that, when once in motion, the strongest masonry is crushed by the moving masses of earth. As soon as the masonry is completed, the pilot tunnel, which stands in the completed rings of the main tunnel like a central table, has served its purpose, and the last rings composing it are taken apart and are used over again in a new length of the pilot tunnel. The latter, therefore, really represents only a small section, which is continutunnel. The latter, therefore, really represents only a small section, which is continually advanced by taking the rings from the rear and to the front, so that the cost is only small, while the advantage of great safety is obtained. As we have already stated, the excavation is pushed at the extraordinary rate of 5 feet per day, and it appears by no means sanguine to expect an increase when increased facilities for handincrease when increased facilities for hand-ling materials now contemplated have been secured. The pressure of air maintained ranges from 18 to 21 lbs. per square inch, and additional compressors guard against any stoppages by reason of breakdowns in the machinery. It is only just to the con-ductors of the enterprise to say, in conclu-sion, that the present system inspires con-fidence. Work on the New York shore will commence at an early date, and when rease when increased facilities for hand will commence at an early date, and when the South Tunnel, which is now alone be-ing excavated, and has reached a distance of 150 feet from the shaft, is brought as far as the north tunnel, both can be prosecuted

### The Great Eastern.

The project of using the Great Eastern for the transportation of cattle from Africa has, it seems, been definitely abandoned. To what The cutting parts are made to gauge, of choice steel. They can be taken off to be ground, and when worn out can be replaced at a slight expense, making the tool as good as new.

This improvement makes the tool the best and cheapest that you can have in your shop.

All extra cutters warranted to interchange.

The contended of the best and cheapest that you can have in your shop.

All extra cutters warranted to interchange.

The contended of interchange it seems, been definitely abandoned. To what purpose, actual or intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her interchange actual or intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. She is indeed an ill-fated vessel; she has been unfortunate from the very start, and her intended, she will be turned next, it would be hard to say. eight years ago an Eastern Steam Naviga-tion Company was formed in England to maintain an ocean trade to the East round the Cape of Good Hope. The next year the directors decided that such a trade would to build a vessel which would transport 1000 passengers, 5000 tons of merchandise, and 15,000 tons of coal for fuel. The result, with certain what would come of the trade to and from Australia; consequently, it was determined to send her hither on a trial voyage.

The attempt proved very unfortunate. She left the Thames September 8, 1859, but an explosion occurred off Hastings, killing and wounding a number of persons, and bringing the proposed trip suddenly to an end at Weymouth. After costly repairs, bitter re-riminations and various law suits, and the death of Brunel, her planner, she again set this alteration were eminently satisfactory, weymouth. After costly repairs, bitter retriminations and various law suits, and the death of Brunel, her planner, she again set sail for this port in June, 1860, and reached here in eleven days. For nearly a twelvemonth she plied between England and the United States, but steadily lost money, not whine sufficient in fact to pay for her cur. Tor Olocks, Indicators, Telephones, Call Bells, Bell Punches, Steamboas and Bailroad Vee. Burnished or Nickel Plated.

ANSONIA BRASS AND COPPER CO., 19 CIMF St., New York.

ANSONIA BRASS AND COPPER CO., 19 CIMF St., New York.

Much difficulty was experienced in passing through the cribwork of the river bulkhead, of which a part was found to be sunk out of line. Careful and persistent work brought the tunnel through this section, about 30 feet in length, and then undisturbed good ground was entered, in which ordinary operations could be resumed.

The present system is a modification of that first adopted, which adds much to the safety, and, while it appears to be conducive to more rapid working, does not very considerably increase the cost per running foot. The distinctive features! claimed for the Haskin system—the employment of compressed air as a counter-pressure and for the blowing out of silt—remain the same. Instead, 2000 troops from England to Canada with a air as a counter-pressure and for the blow-ing out of silt—remain the same. Instead, however, of advancing with a full section, as formerly a counter of the same bearing and she may last long enough to ruin a dozen more.

### The "Security" Sash Lock.

We show in the cuts herewith given the "Security" sash lock. Fig. 1, illustrating the lock released for raising the sash, and Fig. 2, showing the lower sash fastened. This locking device is manufacfastened. Ims locking device is indicated tured by J. B. Shannon & Sons, Philadelphia, and is brought forward with the intention of superseding the old-fashioned turn-



ing contrivance. As may be seen by the engravings, the lock is mortised into the side, or, if wide enough, into the center mullion of the upper sash, and the small plate on the top of rail of the lower sash. The special advantage of this sash lock is that, with its use, the sashes are always locked fast. In order to raise the sash, the catch must be pressed in so that the small



Fig. 2.

tumbler falls out. This allows the lower sash to be raised, which tilts the tumblers, and the catch is thereby released and is ready to lock the sash again as soon as it is brought down past it. The construction of this Lock makes it impossible to open it from the outside. It can also be so placed as to allow the lower or upper sash to be partially raised or lowered for ventilation, and yet securely fastened in position.

relates his experience in regard to the com-parative merits of the Ramsbottom revers ing system and the fly-wheel engines. The experiment referred to was made at the Witton Park Works, where there are three not pay, owing to the expense of supporting mills at work, producing about 750 tons per coaling stations along the route, unless the ship could carry coal enough for the round trip. Arrangements were accordingly made machinery of the works in connection with these forges and mills is driven by steam raised by means of the spare heat of the forge and mill furnaces, and there is no forge and mill furnaces, and there is no hand firing. The leading dimensions of the agriest Eastern. She was some years building, and was finally ready to launch in November, 1857. To avoid the danger of launching so long a vessel stern foremost, she was constructed with the broadside toward the river, on a timber foundation of vast strength, with sloping rails down to the water. The ship was too heavy, or the rails were too gradual, and various efforts were made, and \$300,000 or \$400,000 spent before she was got off. After completion it was uncertain what would come of the trade to and

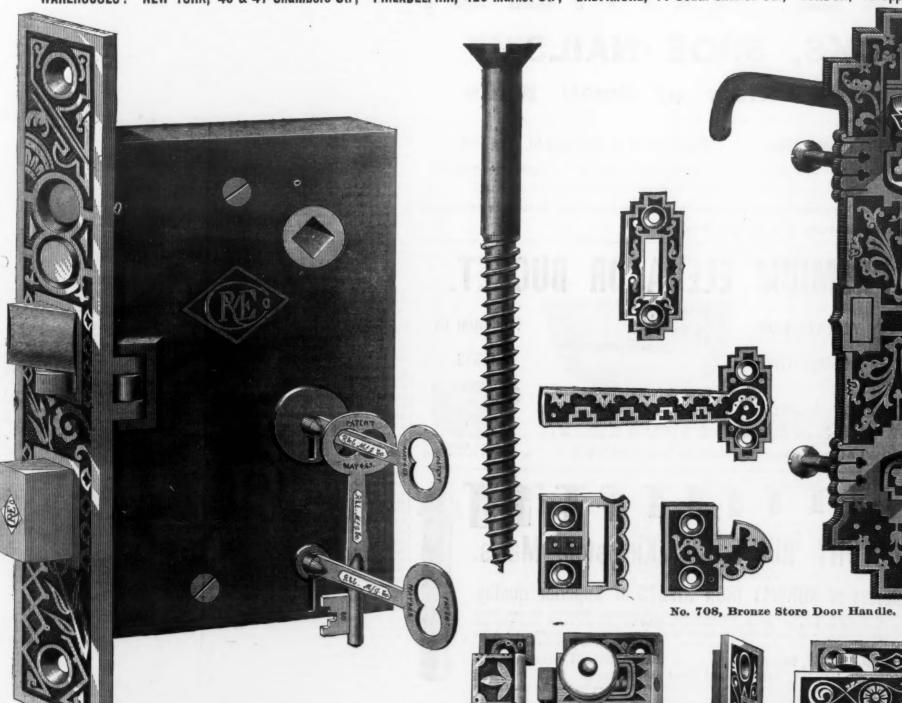
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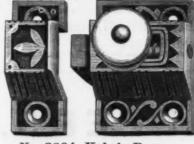
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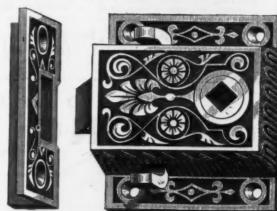
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No. 8004, Kahala Bronze French Window Catch.

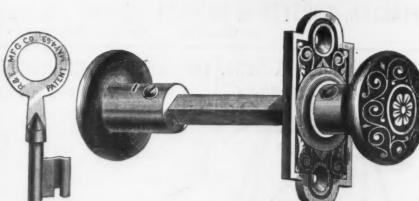




No. 243, Pad Lock.



No. 1236, Pad Lock.



No. 8500 and 8501, Screen Door Catch.

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No. 8003, Kahala Bronze Drawer Pull.



No. 8001 & 8003, Kahala Bronze Sash Fastener. No. 8000 & 8002, Kahala Bronze Sash Fastener.

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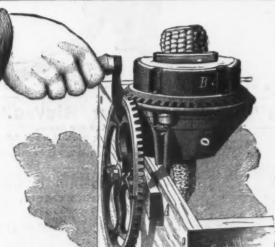
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Life Policies in Force, over 11,900 the signals with telescopes and repeated them to points beyond. The photophone, in one sense, returns to the practice of using light for its signals, and, like the semaphore,

### General Accident Policies

By the Year or Month, insuring against dark lines of the solar spectrum, but he was laying foundations for one of our most valuable modern discoveries—the spectroscope. It is incorrect to speak of Mr. Bell as having made a discovery. He has not discovered anything; the photophone is simply an invention. In this instrument he has made use of the fact that selenium does not con

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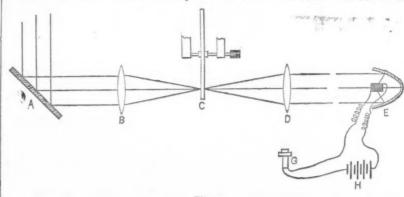
New York City Office, TRIBUNE BUILDING. R. M. JOHNSON, Manager.

boilers. The forge train has 24-inch rolls, 34 puddling furnaces, 19 of which work into 14 "stack" boilers. The fly-wheel was removed and the cylinders were altered from 22 inches to 27 inches diameter, the engine being fitted with reversing gear. The mill was started in June, 1870, and the same satisfactory results attended the working as in No. 2 mill, and still continue to accrue. The third mill, however, remains unaltered at present. The only difference experienced since the removal of the fly-wheels is that the maximum pressure of steam in the boilers is better maintained.

while the disk is revolving the hand is interposed, so as to cut off the beam of light, it becomes possible to hear a shadow, for the sound instantly stops. Cut off the light with a picco of paper, and the sound is only partially interrupted. Take a sheet of hard rubber (vulcanite) an eighth of an inch thick, and though it cuts off the light entirely, the sound goes on with scarcely a perceptible hindrance. Something is still transmitted. Antimony stops the sound least of all, while the disk is revolving the hand is interposed, so as to cut off the beam of light, it becomes possible to hear a shadow, for the sound instantly stops. Cut off the light with a picco of paper, and the sound is only partially interrupted. Take a sheet of hard rubber (vulcanite) an eighth of an inch thick, and though it cuts off the beam of light, it becomes possible to hear a shadow, for the sound instantly stops. Cut off the beam of light, it becomes possible to hear a shadow, for the sound instantly stops. Cut off the beam of light, it becomes possible to hear a shadow, for the sound instantly stops. Cut off the beam of light, it is sound instantly stops. Cut off the beam of light in the possible to hear a shadow, for the sound instantly stops. Cut off the light entirely, the sound instantly stops. Cut off the light entirely, the sound instantly stops. The forge train has 24-inch rolls,

ing furnaces working into seven vertical from the lowest to the highest. Now, if boilers. The forge train has 24-inch rolls, while the disk is revolving the hand is inter-

phone from which the diaphragm and mag-net have been removed, to receive the im-Dr. Van der Weyde on the Photophone. pulses of the light direct. The arrangement is shown in Fig. 4, where A represents the At a recent meeting of the Polytechnic Club of the American Institute, Dr. P. H. Van der Weyde gave some interesting information respecting "The Photophone." He said: I do not attach much importance to this instrument in its present form, nor for the uses to which it has so far been put.

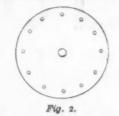


LIFE AND ENDOWMENT POLICIES

It is really a return to an old system. We are transforming sound into light, making it visible; then into electricity; then again transforming it into sound, and so hearing it at the other end of the line. In my early days light was employed as alphabet by means of light, just as I proposed some time since to use the telephone, and thus to do away with the necessity of a battery.

Life Policies in Force over 11 900

light for its signals, and, like the semaphore, is liable to interruption by clouds, fog, darkness, &c. It has no practical advantage in turning light into electricity and then into sound. The discovery, however, must not be considered valueless because we have no use for it at the present time. We do not know what results may grow from it. Fraunhofer had little idea of the value of his work when he was investigating the death by accident, or Weekly Indemnity in his work when he was investigating the dark lines of the solar spectrum, but he was



duct electricity in the dark, while it is a good conductor in the light. Its change from conductor to non-conductor is instan-taneous. If the light falls with rapidly re-

REGISTERED ACCIDENT TICKETS,

Insuring \$3000 against fatal accident, or \$15 a week for total disability, at 25 Cts. This disk, which is shown in side veiw, has a series of holes in the edge. like the disk of a siren. These holes are ar-ranged so that in rotation they allow the light from the lense A to pass through and fall on the lense D. By revolving the disk C as many interruptions of the beam of light as may be desired can be obtained by varying the velocity. The lense D is used to bring the rays into parallelism after having passed the disk. Their object is to bring the beam into a small and manageable form. After being rendered parallel, the rays of light continue their direction, and are received upon a parabolic mirror E, in the focus of which is placed a cell of such a character that an electric current passing through it must traverse a selenium surface which is exposed in the focus of the reflector.

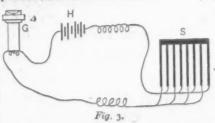
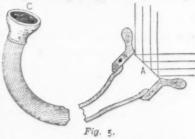


Fig. 3 represents, on a larger scale, Il the which is the only standard that will the arrangement of the recording telephone G, the battery H and the selectric light by comparing it with unium cell J. In the latter, insulated brass diks are connected in alternation with the two wires from the battery H. The connection between the disks is made by a thin film of selemium, which is indicated by the dark line S. As the light faces upon the film the current passes, but ceases in the dark. By revolving the disk at different speeds, the current can be interrupted so as to produce any tone in the receiver G,



Fig. 4. Now, how by means of this apparatus can be talk † For this purpose, instead of the plain mirror (A in Fig. 1), the apparatus shown in Fig. 5 is substituted. It consists of a tilm of mice silvered upon one side, which the light as did the mirror. It is reflects the light, as did the mirror. It is mounted so that the impulses of the words spoken in the mouthpiece can be conveyed to it, causing it to vibrate like the disk of a telephone, the mica forming an elastic mirror. The sound is then transmitted by the parallel rays of light which fall upon the mirror and are reflected to the selenium cell. In working this apparatus, sometimes one hears something, and sometimes one does not. The two portions of the apparatus were in this case separated by some 500



feet. At last Mr. Taintor, Mr. Bell's assistant, was heard to say, "If you hear me, please wave your hat," and Mr. Bell, delighted, rushed to the window and waved

In the case of the telephone the sound vibrations affect the magnet; in the photo-phone they affect the beam of light, the result in each case being the transmission of

In reply to questions, the doctor stated that the mica reflectors were silvered upon the upper side, though they have been prepared with the silvered sur-

The electric light could be used for transmission, but it was impossible to do so with gas light. What the transmitting agency really is seems to be an unsettled question which is being investigated. The doctor proposed to use the apparatus in an indirect way, as

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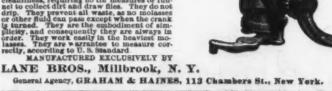
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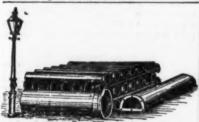


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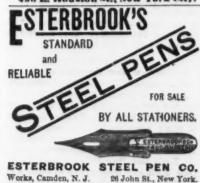


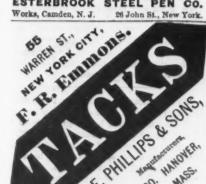
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((((---5)))

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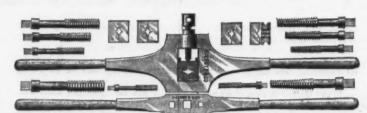
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known phenomena which seemed to throw

action of heat, being, in fact, very sensitive.

For this reason, it was very badly chosen for telephone bodies. His own he had made of wood, because when of vulcanite the rapid expansion from the heat of the hand would put the instrument out of adjustment, no matter how carefully it had been adjusted at first. This was corroborated by several practical men.

The passage of heat without light was spoken of. Dr. Parmalee detailed the man-ner in which he made a bi-sulphide of carbon lense, in which he dissolved iodine until it was perfectly opaque. Its powers as a burning glass were apparently not at all injured, and it was still capable of lighting objects in its focus. If the rays of heat are the important ones in the transmission of the sound, why may not the heat rays from a hot body be used for the purpose instead

Dr. Van der Weyde said that some of the experiments made him think it was heat, while other experiments made him doubt it, so that there were not facts enough at hand to justify one in coming to a con-

### Tests of the Kloman Eye Bar.

As there has been much discussion of late concerning the respective merits and advan-tages of the different processes for the man-ufacture of eye bars for bridges and other heavy structures, and as the subject is on of vital importance to bridge builders and railroads, any new information on that head is likely to prove interesting. The patented process invented by the late Andrew Kloman was fully described in a former issue of The Iron Age, and since then numerous tests have been made upon full size bars manufac-tured by Mr. Kloman under this process, which have more than borne out the claims

made for the invention at that time.

In discussing the relative merits of the discussing the relative merits of the tulimate Strength. | \$\frac{1}{2}\text{.r per cent.} \\
\frac{1}{2}\text{.r per cent.} \\
\frac{1}\text{.r per cent.} \\
\frac{1}{2}\text{.r per cent.} \\
\frac{

Here a number of amusing, though unim- tests is shown in the appended copy of the portant, questions were answered Reply-ing to others, it was stated that about half the substances that have so far been experimented upon show signs of being acted upon in the same way as selenium, antimony and vulcanite. In order, the most sensitive at a point far enough removed from either substances are selenium, antimony and hard rubber or vulcanite.

Mr. Sutton: "Does something else go with the beam of light?"

Dr. Van der Weyde: "Heat, of course."

A general discussion here followed, in which many suggestions were made, but the Doeter said that a vast number of extended to the large discrepancies between the ultimate the large discrepancies between the ultimate the large discrepancies between the ultimate the large discrepancies between the ultimate. which many suggestions were made, but the Doctor said that a vast number of ex-periments must be made, and facts remained to be determined before much could be said as to causes, &c. There were some well-shape of the heads of these two bars is shown in the drawings below : the least seclight upon the subject; for example, the fact that glass does not pass radient heat at low temperatures, as is witnessed by our hot houses. The glass lets in the light and heat and forms a heat trap to retain it.

Speaking of the properties of vulcanite, he said that it expands rapidly under the action of heat, being, in fact, very sensitive.

For this reason, it was very badly chosen of the properties of vulcanite, because of the properties of vulcanite, stem. These tests and the others previously referred to, furnish evidence as to the merits possessed by this process for manufacturing steel and iron eye bars.

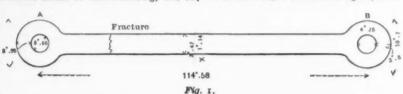
WATERTOWN ARSENAL, MASS., January 10, 1881.

TENSILE TESTS OF TWO STEEL EYE BARS FROM ANDREW KLOMAN, PITTSBURGH, PA.

Bars marked Wilson, Bros. & Co. No. of test, 493. (Size of bar see Fig. 1).

Sectional area, 4.02 square inches; gauged length, 160 inches. The length of the stem was laid off into 20 inch sections, by center punch marks. Blocks were secured to the bar at the outside marks, and gaugings for

Total loads applied.	Lbs. per square inch.	Elongation. Inch.	Set.—Inch
4,020	1,000		
40,200	10,000	9.058	
	1,000		0.001
	1,000		0.001
60,300	15,000	0.087	
	1,000		0.003
80,400	20,000	0.117	
	1,000		0.005
100,500	25,000	0.148	
	1,000		0.001
104,590	26,000	0.154	
108,540	27,000	0.162	**********
112,560	28,000	0.167	
116,580	29,000	0.174	
120,600	30,000	0.181	**********
	1,000		0.017
124,620	31,000	0.188	
128,640	32,000	0.195	
132,660	33,000	0.204	
x 36,680	34,000	0.212	
140,700	35,000	0.222	
-4-17	1,000		0,082
142,710	35,500	0.228	
844,730	36,000	0.235	
146,730	36,500	0.244	
148,750	37,000	0.350	
150,750	37,500	0.257	
152,760	38,000	0.271	
154.770	38,500	0.311	
156,780	30,000	0.357	
160,800	40,000	0.477	
180,900	45,000	1.237	*********
336,6501	83,749	*37	
330,0301	03,740	14.582	
		44.304	********



the condition of the latter should be the same; that is, the bars should be made of the same material, and should have the same dimensions and proportions as nearly as possible—more particularly so in respect of the proportion of material contained in the bar, measured in cross section through center of the eye, and measured in the stem of the bar. The broadest claim made for his process by Mr. Kloman was that an eye bar rolled by him of any material whatsoever, with 40 per cent. more material in the eye section than in the stem, would, when pulled to breaking strain, invariably break in the making comparisons of the results of tests, the condition of the latter should be the cess by Mr. Kloman was that an eye bar rolled by him of any material whatsoever, with 40 per cent. more material in the eye section than in the stem, would, when pulled to breaking strain, invariably break in the stem, the head remaining intact.

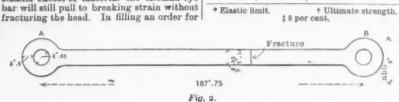
In the construction of the steel channel span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel are the stem of the steel channel span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel are the stem of the steel channel span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel are the stem of the steel channel span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel are the stem of the steel channel span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel are the stem of the steel channel span of the Plattsmouth Bridge, at Plattsmouth Brid

span of the Plattsmouth Bridge, at Plattsmouth, Mo., steel eye bars of Mr. Kloman's mouth, Mo., steel eye bars of Mr. Kloman's manufacture were used, and in order to arrive at satisfactory results as to their strength, a series of tests was made at the Government Arsenal at Watertown, Mass., by pulling to breaking strain seven of the largest steel eye bars made for the bridge. The object of these tests was a double one, being to obtain results as to the The object of these tests was a double one, being to obtain reliable results as to the merits of the process by which they were made, and as to quality of steel contained in them. On the first head the result was entirely satisfactory, as every one of the seven bars broke at or near the exact center of the bar, and the elongation of the pin holes was in proportion to the elongation of the stem of the bars. In these bars the excess of material across the pin hole was about 50 per cent. But a more recent series of tests has demonstrated that with a much of tests has demonstrated that with a much smaller excess of material the Kloman eye

Total elongation center to center of eyes,

Loads applied, lbs.	Lbs. per square inch.	Elongation. Inch.	SetInch
3,960	1,000		
39,600	10,000	0.023	
1,000			0
59,400	35,000	0.036	
	1,000		9
79,200	90,000	0.050	
	1,000		0
99,000	25,000	0.067	
	1,000		0
110,880	28,000	0.077	
	1,000		0.003
zz8,800	30.000	0.087	
	1,000		0.006
126,720	32,000	0.097	
130,680	33,000	0.106	
134,040	34,000	0.216	
138,600	35,000	0.133	
	I,000		0.039
142,560	36,000	0.177	
144,540	36,500	0.263	
146,520	37,000	0.377	*********
150,480	38,000	0.657	
158,400	40,000	0.874	
26z,000†	65,910		
9	0	6.402	

† Ultimate strength. \* Elastic limit.



ate variation for the different sizes of pin center of eye A, and was granular in apholes. It was feared by the engineer that the eye bars were not sufficiently strong in the edge of the stem, the fracture taking the head, and in order to assure the engineer and himself on this point, Mr. Kloman directed that two bars having least sectional area across the eye should be sent to Watertown to be tested. The result of these

steel eye bars intended for a railroad bridge across Broad River, South Carolina, it was discovered by the engineer of the bridge that after some of the bars had been bored there was only about 31 per cent. more material in cross section at center of the eye than in the stem of the bar; this was caused by the peculiar design of the head, which did not admit of a proportionate variation for the different sizes of pin

# The Iron

### Metallurgical Review.

New York, Thursday, February 3, 1881.

		-	-	-		
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Baltimore. Our English Letter.

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If the telegraphic reports are correct, Mr. Gowen has scored another victory, as the applicants for a mundamus against the directors to compel the holding of a shareholders' meeting before the date fixed, March 8th, have withdrawn the application and the meeting will be held on that date. The statement of Mr. Gowen at the Cannon Street Hotel. Loadon, appears to have had a good effect He stated that two mistakes food exports, we have compiled from the rehad been made: One that he had paid for ports of the Bureau of Statistics the followthe coal and iron property in an interest ing table, showing the exports of domestic

ing one (that is, in bonds rather than stock.) ended with October. Values are reduced to This seemed now an error, but he questioned if in the future it would be so regarded. It should be said of this error, if it was one that others were equally responsible with Mr. Gowen, and it is meither manly nor honorable to make him the scapegoat of all sins. The second mistake to which he confessed was his attempt to carry the Read ing through its difficulties so long as he did. He should have given up two years before. Altogether, it looks as though Mr. Gowen might yet accomplish what he purposesbring the Reading through its troubles, and then retire as he has long wished to do.

### The Wheat Crop and Commercial Prosperity.

It seems evident to the best-informed observers that the continuance of the present prosperity in this country will depend largely, if not entirely, on the balance of trade remaining in our favor. Whether this balance will continue depends mainly on two things-the demand abroad for our surplus cereals, and the amount of our purchases abroad. The chief item is the first. So long as Europe is dependent upon us for so large an amount of its "corn," gold will flow to us; our currency will be inflated by this gold-plus the produce of our own mines-and the good times that come with inflation, low interest, and large amounts of capital seeking investment, will be with us. It is a question if, in the near future, we will not overdo the production of grain and have such a surplus that Europe cannot take it all; but for 1881 there appears to be little danger of this. The world's requirements admit of but little contraction, and the supply does not promise o be overabundant. One of the best European authorities on this subject, Beerbohm's Corn Trade List, states the matter thus: 'If we assume the yield of the new crop at 8,600,000 quarters for human consumption there now remains 5,590,000 quarters of it. seeing that 2,910,000 quarters have been delivered from the beginning of September to December 25; whereas last year, out of the crop of 5,500,000 quarters, the deliveries during the same period had been 2,063,000 quarters, thus leaving 3,437,000 quarters of new home-grown wheat in the country. A similar state of things prevails in France and some other parts of the Continent.' Commenting on this, an English commer-

ial authority says: On the other hand, the stocks of foreign wheat in the chief ports of the United Kingdom come out about a million quarters less than a year ago, while millers and others-second hands, as they are called in the trade—hold very light stocks of wheat. Balancing the larger farmers' supplies against the diminished stocks in importers' and millers' hands, there is about the same quantity of wheat on view at home as there was 12 months ago. In France the situation seems to be very similar. In the United States the visible supply at the sea and lake ports are given

"thu	8			
				)uarters
End of	1880			3,750,000
9.6	1879	**********		3,580,000
64	1878			2,285,000
-6	877			8,375,000
" sigh	is blocke	leal of the d up by ic same time increase	e on the	canals,

Beerbohm's list gives the following as the results of the wheat crops of the world :

from America.

Re	Probable quirements, Quarters.	Probable Surplus, Quarters.
United States and Canada		34,500,000
United Kingdom	15,500,000	
France		****** ***
Belgium	1,500,000	********
Germany	2,000,000	
Holland	750,000	
Austria-Hungary		1,000,000
Russia and Danube		2,500,000
Switzerland		
Italy	1,000,000	********
Spain and Portugal	750,000	** ******
Algeria		250,000
Egypt Australia, Chili, India and		500,000
" Sundries "	********	3,000,000
West Indies, &c	3,000,000	
Total	30,500,000	31,750,000

To an American this is a very interesting table, showing the dependence of Europe on this country for food supplies. It also shows the slight excess of supply over demand. An English journal commenting on these figures " Europe has been visited by adverse weather, and shortness of supplies immediately resulting from that weatherperhaps, also, more particularly as regards Russia, from the previous diversion of labor from agriculture to war-and America, with peace, a fertile soil, and favorable weather, has saved us from famine. The advantage to American commercial progress has been manifested in Western town and village of that continent has felt, and has still to feel, the effect of the riches of the soil. The unusual inpour of money obtained from Euwas, in the autumns of 1879 and 1880, sent from the stocks in the Bank of France and England in exchange for the surplus pro duce in Chicago and the West generally.

As showing the present magnitude of our

thousands of dollars

Products.	Weights	and Num-	Values in thousands of dollars.	
	1880.	1879.	1880.	1879.
Hogs	67,578	67,566	8413	\$561
Cattles	191,758			
Sheep	169,633	184,427		
Fowl,	******		18	18
Beer			262	208
Breadstuffs			339,941	
Prepd. spices,			74	71
&c			1,988	1,398
Fruit				
Binseng, lbs	246,751	340,219		418
Hops, lbs	1,797-352	10,401,756	400	
Cofton seed			2,868	2,270
oil, galls	6,263,572	5,485,961		
Provisions			118,980	.95,696
Rice, lbs	133,217		10	24
Salt, bushels. Cotton seed,	35,292	19,706	10	
Ibs	8,079,312	10,567,445	123	94
Spirits			2,973	2,054
Sugar & mol.			1,710	6,764
Vinegar, galls	20,423	16,396	5	4
Vine, galls	142,748	38,646	XX4	35
Other goods			310,812	262,100
Total			\$696,847	\$596,545

However long this state of affairs may last, it will not endure forever. The sea sons of Europe will not always be bad. Some system of land reform will be introduced in England and Ireland that will increase the product of those countries. The other nations of the world that now furnish part of the surplus will furnish it in a largely increasing measure. We cannot expect to feed the world always, nor, in proportion to our crop, in the same measure that we do now. We are not crying "wolf' yet, but it becomes us to watch for his com-We must extend the exportation of ing. other articles besides grain, and it is a solace to know that the incoming administration is fully alive to the necessity of extending our trade in articles other than those which now form so large a bulk of our exports. "Diversification of exports," as well as of industry, is a cry worth sounding.

### Technical Education and the Carriage Trade.

One of the problems most worthy of the attention and action of trade associations, is that of devising means for the training of a class of skilled workmen, mechanics and designers. The old apprentice system is of the past, and there are no hopes for any success in reviving it. It was based upon relations between employer and employee which have long ceased to exist, and a resumption of which cannot be thought of. With many of its faults, the apprentice system, how ever, combined great recognized advantages the loss of which is now seriously felt in many trades. While industry and merit assure a few, favored by natural gifts or by circumstances, an eminence in their trade, the class of mechanics who are not alone skilled, but are also capable of originating improved methods or new designs, is growing less numerous from year to year. There is a serious gap between the professional expert and the skilled workman which ought to be filled, and which can only be occupied by those who possess, besides the training of the workshop, some special acquirements that few are capable of obtaining by private application in leisure

Abroad, and notably on the Continent, this has been thoroughly understood, and the governments, as well as trade associations and private individuals, have done much toward establishing a system of technical education for artisans and mechanics which is bearing excellent fruit. In our ountry little has as yet been done in this direction, but there is every reason to believe that the matter will come up, in some form or other, before many of the trade associations which have so powerful an influence for principally upon a substitute for the bill of good. The most recent successful effort has Capt. Eads. This substitute is understood to been made by the Carriage Builders' National | modify very materialy the conditions of the the able argument made by Mr. G. W. W. Houghton, Eads scheme. It changes the terms of the editor of the Hub, before a convention at guarantee from 30 years to 15, and provides extend the "Merchants' Line," now running Chicago, the trade is sorely in need of edu- that the government shall have full control cational facilities. He states that, with a of the railway and of its receipts while St. Louis and New Orleans, and East to total of over 15,000 carriage and wagon the guarantee runs, and that the guarantee | New York and Boston, and to build a line builders in the United States, there are less shall not be operative until the Mexican South and through the Atlantic cities as far than a dozen competent carriage drafts- government shall have formally conceded to as Savannah. This is all very well, but to men in the country, of whom the majority this government the right to exercise such are foreigners. The result is that American control; also that the privilege of free nopolists," it will have to be surrounded builders of more complicated carriages lack transportation of the mails and public proporiginality, depending for their ideas upon erty of the United States, originally in- placed about stock companies. France and England, and as the wants of tended to extend during the period of the those countries differ widely from our own, the articles produced are not well term of the proposed charter, which is 99 adapted to our requirements. Instead years. There is strong opposition in the of experimenting with new ideas by simply working them out on paper, our and the substitute, and it is not likely that, builders are forced, by the absence of sup- even in the modified shape, the proposition port from properly qualified employees, to can be carried in the committee. The develop them in finished carriages.

Impressed with the necessity of taking steps towards remedying existing evils and their company and the guaranteeing of its of laying the foundation for future progress, the members of the association have raised the great trade revival of 1879-80. Every a fund of upward of \$8000, and have (early the Nicaragua or Panama scheme, but it is in December last) founded a school which is not thought that this argument will avail about, but it is none the less interesting. now in full working order in connection them much. with the Metropolitan Museum of Art in this city. The studies include scale and full

scope of the new scheme, the future of which fictitious to the real demand and creating no is assured for three years at least, so far as the required financial support is concerned. t is hoped that from these modest beginings a school will be gradually developed which will supply the want so severely felt y the trade.

In the textile industries, and in a number f branches of manufacture in which artistic esigning and a practical knowledge of nethods and materials must go hand in and, movements like that already initiated ther hand, the rapid development of trade urnals-in numbers as well as in the eling that the remedies for many of the xisting evils have been found. The future aay safely, we believe, be left to the busienterprise of our manufacturers and the intelligence of our mechanics, trained technical schools and kept in constant ontact with the studies of their youth through the agency of the press.

### Recent Railway Accidents. The severity of the winter and an excep-

tional rush of business, may partially account for the frequency and disastrous without its list of casualties, a great number employees and passengers. The fact that no large massacre, with its attendant newspaper reports full of harrowing details, has surred, prevents general attention from being directed to the subject. The daily railroad disaster, with a report of the killing of a brakeman, an engineer or a firemen, fails to arouse sympathy or lead to comment. Yet in the aggregate they roll up a frightful total, and their frequent occurrence reveals a state of affairs which is disquieting, and which should induc railroad managers to make every effor to take comprehensive measures of pro tection, before some great catastroph rouses public indignation. The difficul ties against which they must contend are enormous, it is true. The blockade of snow has been continuous, and the storm have been frequently such as have cripple the railroad manager's most efficient aid the telegraph. On the other hand, th business, large as it is, has naturally been intermittent in its character, so that th whole service is alternately almost at a stand still and strained to its utmost capacity. Al this readily explains the frequent occur rence of accidents, but will hardly b accepted as offering proof that they canno be avoided. The greatest number of casual ties appear to be due, as usual, to rear and butting collisions, but we notice that the breakage of rails is extraordinarily frequent and generally gives rise to grave casualties, and that the stove is again playing its disastrous part in firing the wrecks. We have no data on which to base an opinion as to whether the failure of the rails is due to preventable causes. The subject is one which ought to receive close investigation, and full details should be furnished as to character of roadbed and quality of metal. As to the scond class, it appears that the Ashtabula and other disasters have not sufficed to teach the lesson that the average stove in American passenger cars acts like a torch in firing the wreck.

The House Committee on Interoceanic Canals, on Saturday last, had a long and animated discussion of the various measures before it in connection with interoceanic communication. The discussion proceeded guarantee by guarantee (30 years) shall cover the entire committee to both the original proposition friends of Capt. Eads attach great importance to the point that the chartering of indebtedness, do not necessarily preclude favorable action by Congress upon either

The Western coke makers are complainrope has had still another effect. It quite size drawings, geometry applied to carriage ing bitterly of the inconvenience and loss drained Europe of its surplus gold, which construction, carriage body making, the construction of carriage gearings, wheel companies to furnish them the cars they interesting fact connected with these figures making and the principles involved in the need to move the product of their ovens. is that 134,789 of these immigrants came suspension of carriages. In connection with | The yards are heavily stocked, and in many | from Canada, after having lived there long this course, lectures are to be given by instances consumers are compelled to sus-enough to be classified as residents or citizens foremen and other practical men on subjects pend operations for want of fuel. This of that country. As this number represents pertaining to the trade, the whole occupying makes orders numerous and prices uncertaining two or three hours in three nights of the tain, as, in their anxiety for supplies, containing to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining to the trade, the whole occupying makes orders numerous and prices uncertaining the trade, and the prices uncertaining the prices unc week, the price of tuition being merely sumers have in many cases given duplicate respects. From Great Britain and Canada bearing debt, rather than in a dividend pay food products for the ten months of 1880 nominal. This sufficiently indicates the orders to different producers, thus adding a together we gained 296,025. From Germany

little confusion in the trade. This condition of affairs has lasted for some months past, and promises to continue until the car famine" is over.

The small importance of convict labor as competitor to the labor of citizens is fully understood in times like these; but when our industries are again depressed we may expect a revival of the opposition to prison labor which, in some States, will probably n the carriage trade are on foot. This is lead to the abandonment of all efforts to n encouraging sign, and if we view, on the make the convicts earn their own support. The following statistics of the number of convicts employed in manufacturing in all uality of their contents-we cannot help the States are of recent compilation, and are said to be authentic

Males.	Fem's.	Total
		600
	51	6,58
163	12	37
1,251		1,25
510		510
1,530	730	3,26:
3,763	323	2,884
3.459	59	3,504
30,467	140	10,007
786	x	787
r,600	78	1,68
1,120		1.120
3,507	3,423	4,930
2,953	-269	3,222
37,245	2.877	40,122
	602 6,530 163 1,351 510 1,533 2,763 3,453 10,467 786 1,600 1,120 3,507	60a 6,530 51 163 12 1,451 12 1,530 730 121 3,453 32 121 3,453 52 10,467 786 x 1,150 78 1,120 3,507 1,403 2,953 486

There are 129 penal institutions of all character of railway accidents during the grades in the United States in which con-last two months. Hardly a day passes victs are employed at any kind of labor; 48 are State prisons, 40 city and county jails of which are fatal to a small number of and penitentiaries, 25 workhouses and employees and passengers. The fact that uge and reform schools. The above table does not include the convicts employed in mining operations in some parts of the country.

> The Bureau of Statistics have issued a eport of the foreign trade of the United States for December and the calendar year 1880, as compared with 1879, from which we take the following totals:

ER1	MERCHANDISE.	
eert	For	the ze mos
)-	1880.—Exports—Domestic	Biller + Co
1-	Imports	\$889,649,84 696,8c3,43
d	Excess of exports over imports.	\$192,846,40
Bd	1873.—Exports—Domestic	10,503,07
l,	Imports	\$765, 150,82
n	Excess of exports over imports.	\$251,557,02
e  -	GOLD AND SILVER COIN AND BUL 188c.—Exports—Domestic	\$8,415.00
0	Imports	\$16,045.90 85,375,72
t	Excess of imports over exports.	\$69,229,822
-	1879.—Exports—Domestic	\$18,670,298
9	Imports	\$45,816,998
2	Excess of imports over exports.  TOTAL MERCHANDISE AND SPECI	MG.
9	rase.—Exports—Domestic	\$883,996,395 21,699,346
	Imports	\$905,695,741 782,079,156
1	Excess of exports over imports	
	1879.—Exports—Domestic	773,327.053 17,649.770
	Imports	790,976,803 606,795,754
1	Francis of exports over imports	.006.

Excess of exports over imports. \$184,181,060 It is a significant fact that the value of the merchandise exports in December last were larger than for any previous month in the history of the country. They reached the enormous total of \$98,856,632.

It is probable that the principal commercial exchanges of New York and other cities will unite to provide themselves with telegraphic facilities, independent of the comhich have pa between Chicago and Milwaukee, down to keep the new line out of the hands of the "mo with better safeguards than are usually

As an indication of the great activity of railroad building in the West, we note the following news item by telegraph from St. Louis, under date of January 30: "Over 4,500,000 pounds of railroad fastenings, valued at about \$140,000, have been sold here during the past few days. The supplies are to be used on railroads now being constructed west of the Mississippi River. A good deal which is surprising in the rapidity of railroad extension west of the Mississippi disappears when we study carefully the conditions under which it has come

Statistics of immigration for 1880 show that there arrived in the United States during the year 586,068 immigrants. The most

we received 133,059, and from other countries than those named 157,000, or a little more than came from Canada alone.

The Committee on the World's Fair are holding daily meetings, and report a gratiflying increase in popular interest. This is shown by the increasing volume of their correspondence, and by assurances of help and co-operation from all parts of the country. General Grant has added much strength to the movement and done much to nationalize it, while Mayor Grace, as chairman of the Finance Committee, is probably the best man to organize the support expected from the business men of New York. Everything now gives promise of success.

In our Washington correspondence this week will be found the full text of the letter of Secretary Sherman to the counsel for the manufacturers who last week visited Washington to urge a reconsideration of the ruling of Assistant Secretary French with regard to cotton ties, declining to interfere with the ruling as it stands. No recourse can be had except to Congress, and it is heped an amendment of the law can be secured at the next session.

### NEW PUBLICATIONS.

REPORTS FROM THE CONSULS OF THE UNITED STATES, No. 3. JANUARY 1881. Published by the Department of State. 1881.

In accordance with an act of Congress the State Department now issues, at regular the State Separations now issues, at regular intervals, a volume containing the reports of the United States consuls on questions relating to the commerce, manufactures and industry of their respective posts. As the matter contained in documents of this kind is largely statistical, their value depends much upon a prompt publication, and that is what the department is now evidently striving to accomplish. Naturally, the reports submitted vary widely in their character, their scope and their usefulness, and while some are of doubtful utility, it is only just to say that in general the standard is high. The development of the system of reporting on the part of our consuls has been watched with growing interest, and it is pleasing to note a gradual but pronounced improvement. Many of the documents before us contain much that is of direct and immediate the state of the state diate importance, not alone to our merchants, but also to our manufacturers, al-though none are given which concern our iron, metal or hardware interests directly.

Explosions of First-damp in Collibries. (Les Explosions du Grison dans les Houillères.) À re-port by Prof. Haton de la Goupillière. Paris 1880. We have had occasion repeatedly to refer we have not occasion repeatedly to refer to the good work which is being done by the French Commission appointed to investigate the best means of preventing colliery ac-cidents. The eminent engineers and scient-

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ists who are members of this commission have gone to work in a very deliberate way, by carefully gathering all the material on the subject in a series of reports, previous to undertaking to frame any recommendations or presenting any outlines for laws on the subject. The first document gave a summary of the data available on the nature of the fire-damp itself. The second, just issued, is more general, its object being to present a statement of the properties of fire-damp and its disengagement in mines, the means available to combat its dangers, and the resources we possess to remedy the accidents which could not be prevented. Like the first volume, this second one is an admirable summary of our present knowledge on the subject, and it contains many facts obtained by the commission through its extended inter-course with the colliery managers of France and other countries. We understand that the final conclusions of the French Commission will be laid before the public at an early date, together with a series of special reports on subjects to which some of its members have devoted much research and investiga-tion. Prof. de la Goupillière has exhibited much judgement and an untiring energy in connection with the work, and we feel con-fident that he and his fellow-members will do much to promote a more general know-ledge of colliery explosions, and contribute valuable directions as to the best means of

HISTORY OF TIN. (ALLGEMEINE GESCHICHTE DES ZINNS.) By E. Reyer. Vienna, 1880.

Dr. Beyer, of Gratz, who has been making a specialty of historical researches on the manufacture and deposits of tin, has, in the little pamphlet just issued, published a brief historical sketch on that metal which con-tains many facts of interest which we hope to present in a summary in an early issue

Transactions of the American Institute of Min-ing Engineers. Volume 8. May, 1879, to Feb-ruary, 1880. Easton, Pa.

The eighth annual volume of the Transac tions of the American Institute of Mining Engineers contains the proceedings and papers of the Pittsburgh, Montreal and New York meetings, carrying it up to February, 1880. As we have given careful reports of the meetings, and have published all papers likely to be of interest to the readers of The Iron Age in full, or have given careful abstracts of them, we need only call attention to the fact that the volume has been issued by the press of the Institute. Like the others, it again exhibits throughout the careful editing bestowed upon it by Dr. Drown, the secretary.

Hamp Book for Stram Engineers. By William M. Barr. Published by J. H. Kerrick & Co., Indianapolis, Ind.

and their action. The purpose has been the two-fold one of guiding the purchasers of such machinery by giving them "points," and of furnishing them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will, under all circumstances, wield such machinery by giving them with information and will be a member of the been sanctioned by the United States courts. Union undertakes all the telegraph and such machinery by giving them with information and will be a member of the been sanctioned by the United States courts. how to utilize their property to the fullest advantage, and to preserve it in good order. Modest though his aspirations may seem, Mr. Barr's sphere of utility is a large one, and we have no doubt that his labors are much appreciated by a great number of readers. His style is simple, his statements direct and to the point, and his arguments and descriptions will be easily grasped by those ever who have no previous knowledge of the sub ject. The scope of his work will be suffi-ciently indicated when we state that it contains chapters on fuel and combustion, heat and steam, boilers, boiler furnaces and ap-pendages, boiler explosions, the selection, care and management of stationary and portable engines, and the care and managenent of locomotives.

### WASHINGTON NOTES.

Congress and Politics-The Funding, Appropriation and Tariff Commission Bills-The Duty on Tank Iron-The Hoop Iron Ruling.

> (From Our Own Correspondent.) WASHINGTON, D. C., February 2, 1881.

The obstructions placed in the way of necessary legislation by the Electoral Count resolution, is beginning not only to endanger the passage, for want of time, of the Funding and Tariff Commission bills, but the prospects of the appropriation bilis are not as flattering as they were ten days ago. The Legislative, Executive and Judicial appropriation bill, which includes the salaries of all the civil officers of the government, is yet to be disposed of, and in addition to this the Sundry, Civil and Deficiency bills are

vet in committee. There is a very general feeling favorable to the passage of the Tariff Commission bill. It is still on the Speaker's table, and an early opportunity is looked for to call it up. The friends of the measure anticipate no serious opposition to its passage if they can once get it before the House. A large number of petitions have been received by Senators and Representatives urging the passage of this bill, taking the ground that the appointment of a tariff commission would ultimately take the question out of politics and lead to a regulation of schedules of duties in the interests of home industry, rather than in the interests of party pre-tige. It will also prevent crude and hast tige. It will also prevent crude and hasty legislation, and tend to do away with the incessant agitations which so injuriously affect manufacturing industries. The petitions embrace two-thirds of the States of the Union, and bear the names of nearly 300 large manufacturers. The following are among the names: Rufus S. Frost, president of the National Association of Wool Manufacturers; F. W. Cheeny, president of the Silk Association of America; E. W. Durant, president of the Northwestern Lumber Manufacturers' Association; Thomas MacKellar, president of the Type Founders' Association of the United States and of the Book Trade Association of Philadelphia; D. J. Morrell, president of the American Iron and Steel Association of the American Iron and Steel Association large manufacturers. The following are dent of the American Iron and Steel Asso-ciation; A. M. Garland, president of the National Wool Growers' Association; Geo. Bain, president of the Millers' National Asn; J. Hart Brewer, president of the United States Potters' Association; George S. Bowen, president of the Textile Manufac turers' Association of the West and South; C. H. Dalton, president of the Arkwright Club; John Jarrett, president of the Amalgamated Association of Iron and Steel Workers of the United States; William H. Bent, secretary of the Committee of Builders' of American Cotton Machinery; Wel-

ers' of American Cotton Machinery; Wellington Smith, president of the American Paper Makers' Association, and others.

The Treasury Department has addressed a letter to the customs officers for information respecting their action in regard to the duty on tank iron, complained of by C. E. Pennock & Co., of the Valley Iron Works, Coatesville, Pa., as unjust and erroneous. The allegation is that large orders have gone abroad for tank iron, which is entered as manufacture of iron at a duty of 35 per cent. New York at 2½ cents per pound. The home manufacturers state that they cannot produce the same iron, without the additional labor of punching, for less than 2.6 cents action for customs officers.

per pound. This iron, at present, when imported without punching, pays \$30 per ton, and is admitted with the additional labor of punching at 35 per cent, duty. It appears that the oil companies import large quanti-ties of this iron at a lower rate than the home manufacturers can produce it. No decision will be reached by the department until after the receipt of the information

According to a communication received by Representative Erret and others from large iron manufacturing districts, the delegates of the Amalgamated Iron and Steel Workers of Pittsburgh have not minced matters in expressing themselves concerning Secretary Sherman and his assistant, French, and his opizion on the hoop iron question. The following is a copy of a resolution passed at a meeting on the 29th ult. and forwarded here for the information of the representatives in Congress directly

Resolved, That as delegates assembled in convention, representing the Amalgamated Association of Iron and Steel Workers of Pittsburgh and vicinity, we do most emphatically denounce the late action of Assistant Secretary French, and also the decision of Secretary Sherman, on hoop and tank iron duty as one that will prove detrimental to the interests of thousands of our best citizens, and we pray that our Congressmen, in whom these people have trusted their interests, shell prove worthy of the confidence that we, as iron and steel workers, have reposed in them, and give that attention which is due under the cir-

and will, under all circumstances, wield much influence in matters of legislation. When he retired from the Senate he was Chairman of the Committee on Finance and, in the event of Republican control of the Senate, would either return to that position or would be a prominent member of it. The friends of the iron and other large manufacturing interests expect to be able to secure some satisfactory legislation by the next Congress, which will correct all misconstructions of present statutes.

In this correspondence last week, the hear-

In this correspondence last week, the hearing of a number of distinguished gentlemen interested in the manufacture of hoop iron was printed at length. The Secretary of the Treasury stated then that he would decide promptly, and has done so, adversely to the wishes of the representatives of American industry in this direction. The question was whether hoop iron of foreign manufacture, cut into lengths of 11 feet, with a buckle of raw material riveted on it, and called a cotton tie, could be classed for purposes of customs duty as manufac-tured iron, and thus be admitted at a duty of 35 per cent. ad valorem, or whether it should be classed as unfinished iron, and as such be scheduled at a specific duty of 1½ cents per pound. The Secretary reaffirms the decision of his assistant in the following official communication to the counsel for the manufacturers, which sets forth the grounds for the secretary's action :

TREASURY DEPARTMENT, January, 26, 1881. Messrs. Shellabarger & Wilson, Washing ton, D. C.: GENTLEMEN.—I have considered carefully the matter relative to the duty upon cotton ties, made in part of hoop iron, presented by you on behalf of the American nanufacturers of this class of merchandise. The present duties on hoop iron and on

manufactures of iron not otherwise provided for, were fixed by the tariff act of June 30, 1864. In 1867 a case arose at Galveston, Texas, involving the duties upon a class of cotton ties styled Beard's Patent Lock Tie, the Collector of Customs at that port having assessed upon this tie specific duty applicable to hoop iron. This tie appeared to have a small snap or bolt securely riveted, with a washer on the inner side, and at the other end it was punched with oblong holes for about 3 feet, to receive the snap, according to the size of the bale. Secretary McCulloch in his decision of November 30, 1867, held that the punching of the iron in this manner rendered it useless as hoop iron, and that the article as imported was to be considered as manufactures of iron not otherwise provided for. On January 17, 1868, a letter was addressed by the Secretary of the Treasury to the Collector of Customs at New Orleans, La., holding that iron cotton ties which had a buckle annexed by riveting or otherwise, and which could be detached by hand, or even cut off, whereby the balance of the tie, so styled, might be used as hoop iron, were to be classified as hoop iron, the only exception to that rule being the Beard Patent Lock Tie before referred to. From this latter decision and others of a prior date of like import cision and others of a prior date of like import which had not been published, appeals were taken, and a suit involving the question brought by O. B. Graham against the Collector, was tried at New Orleans in July, 1868. In the report of the Solicitor of the Treasury upon the case, he stated on the trial that the evidence was uniform to the effect that the internal case. was uniform to the effect that the iron tton tie was an article of commerce known before the war, and substantially different from hoop iron, and imported under a dis-tinct order for iron cotton ties, and would not be sent under an order for hoop iron. The Court instructed the jury that if they believed that the acts done in the change of hoop iron to an iron cotton tie made a sub-stantial change in the article, that it was imported for the specific purpose of being used in the baling of cotton, and that it was specially adapted for that purpose, they should find for the plaintiff, which they did. The Solicitor further stated that the

decision in the matter rested upon the ques-tions of fact only, and that upon the evi-dence it appeared to him that the finding of the jury was correct, and that the article must be considered as a manufacture of

that time was, that the effort to introduce these cotton ties at the ad valorem duty was an attempt to evade the law, but that their opinion in this respect was not sustained by the decision of the court. I would further state that this department has received a report of the trial of the case of D. L. Ranlett & Co., against Badger, Collector of Customs at New Orleans, La., involving the duty upon articles claimed to be cotton ties, which took place during the present month, in which the court charged the jury as follows: "If the jury find from the evidence that the articles are prepared for a special use, and that their use is fixed by the preparation which has been completed, so that naturally and economically they can be used for no other purpose, then they belong to the class of manufactures not otherwise pro-vided for—that is, they are cotton ties." This accords with the dootrine laid down in the Graham case. Of course it must be apparent to any one conversant with the subject, that the action of this department, in its construction of the tariff laws, must be in accordance with the law as must be in accordance with the law as laid down by the courts, and cannot be controlled by what the individual opinions of officers of this department may be from time to time. Nor should the decision of one Secretary of the Treasury, on a question of this character, be reversed by his successor in office except upon the strongest and when the case seems to drive

change of ruling to make a new law. Where the previous decision does not directly control the department, I have treated all manufactures of hosp iron as hoop iron, but as to the completed article of cotton ties, which falls within the specific rulings previously made, I can only enforce that ruling as I

Acting in accordance with these principles, and considering the thorougnness with which the case referred to appears to have been tried, the length of time which the decision of this department, based on the decision of the court, has been in force, this ruling, and the fact that cotton ties, when manufactured, appear to be a different article from hoop iron as known to trade and commerce, I feel it to be my duty to allow that decision to remain undisturbed as the rule of action for customs officers in the premises. Very respectfully,

John Sherman, Secretary.

The effect of this decision will be serious to the manufacture of cotton ties in the United States. The statistics show that for 1879-80 27,000 tons of cotton ties were consumed in this country, worth \$6.4 per ton. The English ties, it appears, can be put upon the market at about \$46. It is not possible to accomplish anything in the way of remedying this free-trade movement during the few remaining days of the present session of Congress, but there is no doubt that some action will be taken at the next (Republican) Congress which will do full justice to the interests of home production. The Republicans are anticipating a tariff Speaker and a tariff Committee on Ways

### The Wire Gauge in England,

To the Editor of The Iron Age .- DEAR The diversity in the gauges for wire, sheet iron, &c., is the cause of much trouble; especially when orders are sent from the United States: Few buyers abroad know that the English Weights and Measures Act that the English Weights and Measures Act of 1878 contains provisions which leave no legal remedy to foreign buyers in the case of differences of opinion in regard to the interpretation of an order. The section of the law alluded to is as follows: "In any contract (bargain), sale or dealing, the sizes of wire and metal plates are legally expressed in imperial measures or in parts of an inch." The term "gauge" is simply nominal, and orders should, therefore, state the thickness required. The following weights are reckoned by us per square foot :

Wire gauge..... 0000 000 00 00 English lbs. and 028.... 18.15½ 17.12½ 15.14½ 14.4 Wire gauge...... 1 2 3 4 5 6 7 English lbs. and ozs.... 12.8 12 11 10 8.12 8.2 7.8 Wire gauge....... 8 9 10 11 19 13 English lbs. and ozs..... 6.13 6.4 5.10 5 4.6 3.12 Wire gauge............ 14 15... 16 17 18 19 English lbs. and ozs..... 3.2 2.15 2.8 2.2 1.14 1.11½ Wire gauge........ 20 21 22 23 24 25 English lbs. and ozs.... 1.8½ 1.6½ 1.4 1.2 1 0.14½ 

Yours respectfully. MULLER, UHLICH & Co. London Bridge, E. C., London.

### The Telegraph Consolidation.

The following is a careful abstract of the agreement by which the Western Union Telegraph Company purchases the assets, plant, patents, franchises, real estate and stocks owned by the American Union and Atlantic and Pacific Telegraph companies. The purchase includes all the property of the two companies, except their franchises to be comportation, paid to be corporations. The consideration paid to the American Union is 150,000 shares of uninterruptedly from that time until the exchanged share for share and the bonds at parson, and still continues the rule of action for customs officers.

From that time until the exchanged share for share and the bonds at par for stock at par. The American Union contracts to deliver its property free of liens.

From that time until the part for stock at par. The American Union contracts to deliver its property free of liens and incumberances; that its indebtedness open one and shall not exceed the \$5,000,000 in length, 3 or 4 feet wide, and of proportions. in bonds, and that its capital stock does not exceed 100,000 shares, and that the entire amount of its bonds and not less than (left blank) shares of its stock shall be exchanged within three days after notice that the Western Union stock is ready for exchange.

The consideration paid to Atlantic and Pacific is 84,000 shares of Western Union stock, to be issued in return for 140,000 shares of Atlantic and Pacific stock at \$100 shares of Atlantic and Pacific stock at size a share. This exchange also is to be made by the Union Trust Company at the rate of three shares of Western Union for five shares of Atlantic and Pacific. The 72,010 We are informed that Mr. Matthiessen, proprietor of the extensive sugar refinery in the company of Atlantic and Pacific stock, belonging already to Western Union, are to be included in the exchange, the Western Union shares exchanged for them to be delivered directly to the holders of the present capital stock of Western Union. Claims for fractions of Western Union shares when to the par value of three shares, will be exchanged for five shares of Atlantic and Pacific. All the American Union and Atlantic and Pacific. All the American Union and Atlantic and Pacific and Paci tie and Pacific stock is to be delivered by the Union Trust Company to the Western Union

Telegraph Company.

It is next agreed that Western Union shall increase its capital stock by \$38,926,-590, the issue to be delivered to the Union Trust Company for distribution as follows: Indianapolis, Ind.

Mr. Barr is too well-known as a writer of works on steam engineering to be in need of any special introduction by us. We have more than once called attention to his efforts to aid those owning and running boilers and enginees in a proper appreciation of the principles which underlie their construction as follows:

Arr. Barr is too well-known as a writer of their interests, shall prove worthy of the confidence that we, as iron and steel workers, have reposed in them, and give that attention which is due under the circumstances.

Trust Company for distribution as follows:

St,626,590 to holders of present its investment of earnings in construction and purchases ince July 1, 1866, and the residue, \$23,400, onco, for the purchase of American Union. Some doubt is expressed as to the propriety of passing such a resolution, and the question is suggested among representatives whether increases.

Trust Company for distribution as follows:

\$15,626,590 to holders of present its investment of earnings in construction and purchases ince July 1, 1866, and the residue, \$23,400, onco, for the purchase of American Union the case seems to admit their union, to represent its investment of earnings in construction as follows:

St,626,590 to holders of present its investment of earnings in construction as follows:

St,626,590 to holders of present its investment of earnings in construction and purchases ince July 1, 1866, and the residue, \$23,400, onco, for the purchase of American Union, to represent its investment of earnings in construction as follows:

St,626,590 to holders of present its investment of earnings in construction and purchases ince July 1, 1866, and the residue, \$23,400, onco, for the purchase of American Union, to represent its investment of earnings in construction of earnings in construction of the purchase of American Union, to represent its investment of earnings in construction of earnings in construction as follows:

St,626,590 to holders of present its investment of earnings in constru

years. I can appreciate the argument so strongly presented, that in some cases the intent of the law may be evaded; but as this owners of the two new cables about to be can always be corrected by Congress, it would appear to be wiser for an executive with the constant of the two new capies about to be wiser for an executive western Union disputed any of these conficer to adhere to the decision of his predecessor, rather than to undertake by a purchased companies would have been able and bound to do if the transfer had not taken place, and provided that it is not intended to include any of Atlantic and Pacific's contracts or alleged contracts with any persons or bodies corporate now in litigation, or in regard to which any litigation or adverse claim has arisen. The rights, privileges and interests secured to American Union by the agreement of February 28, 1880, with the Baltimore and Ohio Railroad.

It is stipulated that Western Union shall be put into possession of its purchase on February 24, and that it shall deliver the stock to the Trust Company for exchange on or before that date, but that the purchase and sale shall be held to date from January I last, and that all earnings and expenditures of either of the purchased companies since that date shall be for account of Western Union.

American Union stipulates that the assets the Central Construction Company and all its properties, rights and franchises remaining after the discharge of its debts shall be turned over to Western Union, and it is agreed that if any of the parties to the agreement are unable to secure the corporate authority requisite to the consummation of the general agreement, no liability for damages shall arise therefrom, but the agreement shall be void, and that in the event of delay from legal process, no liability shall accrue therefor to the party affected, but the rights of the parties to the agreem ent shall not be otherwise affected

thereby There is added, after the several corporate signatures to the agreement, the ratification of the Central Construction Committee and a copy of the ratifying resolution to be sub-mitted to the shareholders of the several companies.

### Petroleum as Fuel.

On the invitation of Mr. Geo. D. Mackey,

a practical smelter, and Col. John C. Rose, of the Pennsylvania Railroad Company, a representative of The Iron Age, witness experiments for using petroleum as a fuel made at the smelting furnace in Jersey City. Although the process has been in use for about two years, the parties concerned have observed a discreet silence until now, meanwhile perfecting their patents and accumulating proof of what could be done. The visitors were shown an ordinary reverber-tory furnace. Through an opening about 6 inches square in the side of the brick-work a sort of blow-pipe was introduced, from which an almost invisible vapor was issuing with a roar like that of escaping steam, but which became converted into white flame, emitting an intense heat. T only apparatus employed consisted of two perpendicular 1-inch pipes resembling ordinary gas tubing, one of them conveying crude petroleum, the other superheated steam. These pipes delivered their contents into the horizontal blow-pipe before mentioned, separated from each other at the lower extremity by a space of about 3 inshes, and close to the nozale. In this space the oil and steam commingle, thence rushing out in an atomized condition. The vapor ignites instantly when the match is applied, and burns with great intensity, according to the volume turned on at the cook. On looking into the interior of the furnace, a white flame of intense brilliancy was seen to fill the entire space, and all the exposed surface of the brickwork had a vitreous appearance, as if partially fused. The whole process, told in a word, is this: The petroleum or other liquid hydrocarbon is atomized by superheated steam, and the mixture of superheated steam and petroleum spray, passes into a retort within the furnace. The abroad for tank iron, which is entered as manufacture of iron at a duty of 35 per cent. Under a ruling of the department it scharged that foreign iron can be landed in New York at 2½ cents per pound. The bown arms of the decision has been in force to the rule so laid down in the case of American Union stock and the \$5,000.000 for their distribution in exchange for 100,000 shares of American Union stock and the \$5,000.000 for the department it is charged that foreign iron can be landed in New York at 2½ cents per pound. The

in length, 3 or 4 feet wide, and of proportionate hight, yet the flow of oil and steam through the inch pipes is ample for smelting purposes. The amount of coal used in generating steam is equal to that consumed by a common cylinder stove, and a barrel of oil is said to last 24 hours. As to these latter points the inventor promises more accurate data. An essential change in contemplation into which the steam and the steam of the ste is to run the steam supply pipe through the furnace itself before its contents mingle with the air, as it is observed that the in-

Jersey City, has already commenced putting the new apparatus into his establishment, where they have 13 boilers. Mr. McCrae and Mr. Hayward, who are connected with the Pennsylvania Railroad, appear to have been no less favorably impressed, and it is expected that they will have a locomotive running to Philadelphia within a month. with several other gentlemen, in an inco poration to introduce the new fuel with adequate means.

would be premature, however, to con It would be premature, however, to concede everything that is claimed for liquid fuel in the present instance. The New Jersey Midland Railway Company, not long ago, supposed they would be able to use petroleum on their locomotives, so a corporation was formed with a capital of \$1,000,000

PAT-DEG. 26, 181

Established in 1839.

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MASS.,

L. & A. G. Coes,

Manufacturers of

THE GENUINE

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Screw

Wrenches.

PATENTED,

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None genuine unless stampe

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The strongest Wrench made, and the only suc

A. G. COES & CO.,

Our Agents, GRAHAM & HAINES, 113 Chambers St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices.

STANDARD

GIRARD WRENCH.

WARRANTED.

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OUR BUTCHERS' and HUNTERS' KNIVES Are warranted to be equal in style, finish and quality, to any goods made in the world,

"COMPARE, THEN JUDGE." We are the sole owners of the Gardner Patent Guard and Rest for Carving Forks, and the manufacture of fine carvers is with us a specialty.

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# PRUNING, BUDDING AND POCKET KNIVES

OF EVERY DESCRIPTION.

My Blades are forged by hand from the best cast steel and warranted.

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BUTCHERS' KNIVES, BUTCHERS' STEELS, SHOE KNIVES.

It having come to the knowledge of JOHN WILSON that Counterfeit Butchers' Knives, purporting to be of his manufacture, are being sold in the United States, he hereby cautions all purchasers of his Knives and Steels to be on the alert against such imposition.

JOHN WILSON also hereby gives Notice, that it is his determination to institute Legal Proceedings against any person or persons who may be detected infringing his Trade Mark.

ALBO AT LEIPZIG, IN Every article of JOHN WILSON'S manu-cture, bears the Trade Mark, in addition to a Name. ACCORDANCE WITH THE CERMAN TRADE MARKS' RECISTRATION ACT

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### SEYMOUR'S Diamond Edge Solid Cast Steel SHEEP SHEARS.

GREAT TRIUMPH OF AMERICAN INDUSTRY.



Every Pair Warranted Superior to Imported. HENRY SEYMOUR CUTLERY CO., Holyoke, Mass.

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Kellogg, Johnson & Bliss, Chicago, a retail house, sold our Casters as follows: 1878...... \$98.39 1879..... 1880.....

They are no experiment. They are as safe and good stock as 8d. nails. Their value will grow on you if you will introduce vourself to them.

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THE BUILTY WROUGHT IRON ADJUSTABLE Please send us 24 Daisy Stove GREAT WESTERN STOVE CO. STOVE TRUCK TUCKER& DORSEY, INDIANAPOLIS, IND.

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Agency of HILL BROTHERS & CO., WALSALL, ENGLAND GENERAL HARDWARE MERCHANTS,

BALL'S PAT. SOLID STEEL SHEEP SHEARS. Those shears are unsurpassed for cheapness, dura-bility and utility. They are made of one solid piece of steel from point to point, and cannot be broken in use either in the bow or at the junction of the shank and blade. Samples can be seen at above address, or sample lots durnished.

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## Guns and Pocket Cutlery,

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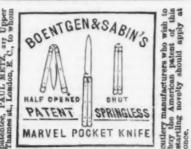
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Table Knives, Razors, Shovels, &c., &c., of every description.



Granted 1749.

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FOR STRENGTH AND Durability IT HAS NO SUPERIOR. GUARANIEED EVERY RESPECT. Wrought Bar, Head and Screw. Owing to the infor these justly Popular Wrenches. we are now manufacturing more than any other establishment in the world. Our Wranch having been imitated by ers, we have adopted the above Trade Mark, and will hereafter stamp all our goods. SEND FOR

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"DRAW CUT" BUTCHERS' MACHINES. Choppers, Hand and Power Stuffers,
Lard Presses.
Warranted thoroughly made ad the Best in Use. MURRAY IRON WORKS, Burlington, Iowa.

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GEO. M. EDDY & CO., Manufacturers of **Measuring Tapes** Of Cotton, Linen & Steel.

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Our Hollow Ware is plated upon the INEST WHITE METAL, and is guaranteed to be plated fully

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Our Knives are guaranteed to STRIP 12 dwts. of Silver per Dozen.

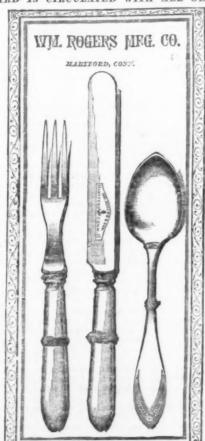
On Spoons, WM. ROGERS & SON, A. A. Our Spoons, Forks, etc., are guaranteed to strip On Tea Spoons, . . . . . . . 43 dwts. per gross, On Dessert Spoons and Forks, . . . 72 dwts. per gross. On Table Spoons and Medium Forks, 96 dwts. per gross.

ALL OTHER GOODS IN PROPORTION. All our Spoons, Forks, etc., are plated upon 18 PER CENT. NICKEL SILVER, The best base known for plating upon.

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Finest Quality Silver-Plated Spoons, Forks, Knives, &c.

NOTICE .- We guarantee the base of our Spoons, Forks, &c., to be full 18 per cent. Nickel Silver, and extra heavily plated with pure Silver. Our goods are all hand burnished, and are first-class in every respect. We pack our

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BOSTON.

CLOTHES WRINGERS.

### RUBBER PACKING

WITH WIRE CLOTH INSERTION.

This Packing has almost entirely superseded the ordinary Sheet Packing with cloth insertion, and will generally last

In order to meet the wants of tool makers, machinists and others requiring an accurate dividing and milling machine, Messrs. E. E. Garvin & Co., of 139 to 143 Centre street, New York, have designed the machine shown in the accompanying illustrations. The spindle, which has a bearing 5 inches long, is 2½ inches in diameter, and a hole 11-16th of an inch in diameter, and a hole 11-16th of an inch in diameter passes clear through it. The front end is tapered to 1½ inches in order to receive the cutter arbor, which is removed from the machine by a plunger. As the threads and tapers in the end of the spindles of both the milling machine and dividing head are alike, it is pos-

THE WM. ROGERS MFG. CO., Hartford, Conn., Manufacturers of CUTLERY AND SILVER PLATED TABLE WARE.

A New Power Milling Machine and Dividing Head.

In order to meet the wants of tool makers, machinists and others requiring an accurate large in the same date funds amounting to £16,408, an annual income of £20,065, and 12,596 members. The total figures for Ireland were: Funds, £2239; annual income, £2030; members, £1100.

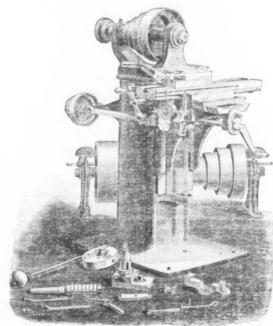


Fig. 1.—The Garvin Power Milling Machine.

sible to interchange tools fitted to either. The boxes are made of composition metal, and ready means are provided for compensation of wear. The spindle is driven by a 2¾-inch belt on a cone pulley of four grades, and there are three changes of feed. The top of the carriage, which is 28 inches long by 5 inches wide, can be lowered from the center of spindle to 17 inches below it. The trigidity of the head, it is claimed, is alike at any point of the elevation or depressible to a company who would tolerate no the received, there were some pared to side pipes; fifth, the relative economy in the construction of pipe service as compared to side pipes; fifth, the relative economy in use; sixth, relative amount of heat surface in use; seventh, if there were any objections to this mode of placing pipes and what they were; and, eighth, if there were any reasons for assuming that overhead pipes had better not be adopted in rooms where there was no machinery, shafting or belting in notion. To these circulars 42 replies were received, of which two were abolity and the relative economy in the construction of pipe service as compared to side pipes; fifth, the relative economy in use; sixth, relative amount of heat surface in use; seventh, if there were any objections to this mode of placing pipes and what they were; and, eighth, if there were any reasons for assuming that overhead pipes had better not be adopted in rooms where there was no machinery, shafting pipes and what they were single 3 or 6 inch cast iron in very low rooms; one was favorable, with exceptions, and 37 were absolutely favorable. Among the ten from whom no answers had been received, there were several known to the company who would tolerate no other machines and the provided for hand feed. The trip is so are ranged that the automatic feed stops will operate with the carriage traveling either way.

With the dividing head and tail stock, shown in Fig. 2, gears can be accurately and the provided for hand feed. The trip is so are ranged that the automatic fe alike at any point of the elevation or depres- greatest economy is claimed where the pipes

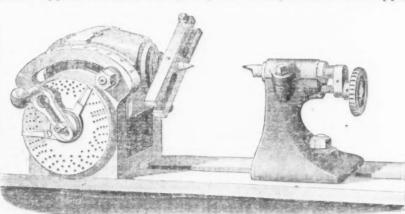


Fig. 2.—The Garvin Dividing Head for Milling Machines.

sion within its compass. With the head in are hung from beams away from the walls a horizontal position, the centers will swing work 10% inches in diameter, and will take in 15 inches between centers on a slide 25 inches tong. The spacing worm is made in halves, and all points liable to wear are provided with means of compensation. Three works are provided with means of compensation. Three halves, and all points liable to wear are provided with means of compensation. Three index dials accompany the heads, dividing all numbers up to 50, and as many others as an everyday machine shop practice may demand. The spindle of the elevating head has a taper hole clear through, and the end of the spindle is threaded to receive the chuck, allowing pieces of any length less than 11/1s inches in diameter to be milled. The tongue under the base of the head is of steam pipes for heating purposes overthan 11/1s inches in diameter to be milled. The tongue under the base of the head is of steam pipes for heating purposes overthead in all rooms in which there is even a small amount of shafting or belting in opersteel, and can be removed to allow swiveling of head, so that work held in the chuck, steel, and can be removed to allow swiveling of head, so that work held in the chuck, such as hollow mills, &c., can be cut under or hooking. The tailed stock has a milledhead adjusting screw and a screw to bind the spindle central in any position. These centers are designed to be used on the new No. 2 power milling machine described, and can be used on other milling, shafting and planing machines.

The Forth port, which wholders' meet

small amount of shafting or belting in operation. They suggest only the trial of coils of pipe placed overhead in the center of rooms of which the sides are occupied by sorting benches, carpenters' or metal workers' benches, or other appliances, even where there is no moving machinery or apparatus

The Forth Bridge Railway directors' report, which was to be laid before the share-holders' meeting yesterday, recommends the Sheet Packing with cloth insertion, and will generally last from three to ten times as long.

Adopted exclusively by many of the largest Iron Manufacturers. Send a small order and give it a trial.

Made in any length or thickness and about one yard wide.

T. J. ALEXANDER, Manager, Boston, Mass.

Sheet Packing with cloth insertion, and will generally last from three to ten times as long.

English Trade Unions.—From an appendix to the reports of the Chief Registrar of friendly societies for the year 1879, it appears that on the 31st of December, 1879, there were in England 174 registered tragestered to the reports of the Chief Registrar of friendly societies for the year 1879, it appears that on the 31st of December, 1879, there were in England 174 registered tragestered to abandon the understaking and realise assets. They state they there were in England 174 registered tragestered trages training to law, showing that these 130 unions had on that day funds amounting in all to £272,413, an aggregate annual income of £273,439, and a grand total of 222,853 members are compended to this course by the Tay Bridge Commission report, which indicated the first of law, showing that these 130 unions had on that day funds amounting in all to £272,413, an aggregate annual income of £273,439, and a grand total of 222,853 members are compended to this course by the Tay Bridge Commission report, which indicated the first of law, showing that these 130 unions had on that day funds amounting in all to £272,413, an aggregate annual income of £273,439, and a grand total of 222,853 members are conditionally to the reports of the Chief Registrar taking and realise assets. They state they appears that on the 31st of December, 1879, there were in England 174 registered tragistered trages traking and realise assets. They state they appears that on the 31st of December, 1879, there were in England 174 registered trages traking and realise assets.



### Polytechnic Club of the American Institute.

DIRT OR DUST FUEL.

At the meeting of this club, on Thursday, January 20, 1881, the president, Mr. Stet-son, opened the general discussion by reading an item concerning the practicability of using dirt for fuel. Many experiments have been made for the purpose of finding the best method of burning coal dust, &c. Blow-ing dust into furnaces along with a constant supply of air, has been tried and found to work with very good success. Dr. Van der Weyde said that for two years past Harway's chemical works at Greenpoint have been using coal dust for fuel. They have no particular arrangement for accomplishing this purpose, save putting the grate bars close together and using a blower. Every other bar is made so that it can be moved to shake the fire. They cannot burn either anthragite or bituminous dust alone, but mix the two. They use three parts of anthracite and one of bituminous dust. The Eastern Transportation Co. has some 20 tugs engaged in towing barges through the Sound. All of these tugs burn coal dust. They get a draft by means of a Sturtevant blower, and carry a fire 8 inches thick, it was said. The disadvantage of blowing dust in with the air is that it necessitates the use of very fine dust. The doctor said he had been connected with several plans for solidifying coal dust. Many of the processes made very good blocks. At sent time, the Delaware and Hudson Canal Co. were making the best and most economical blocks. It is, in fact, a kind of peat; its one objection is that in the fire it softens, and when used on locomotives, drops through the grate bars into the ash pan, and when it gets upon the track still continues to burn. Many fires have in the past been caused by this.

Experiments have been made in burning

street sweepings and similar dirt. A friend has a plan for separating the combustible portion from that which will not burn. The process is now being tried in a large sugar refinery in Brooklyn. Sometimes in the garbage and street sweepings, fuel enough does not exist to keep up a fire. In the other plans for burning garbage where the different portions were not separated, this was a ent portions were not separated, this was a serious matter. One man, at times, to keep up his fire, found it necessary te blow in bensine. My friend does not require a cupola, but can use an ordinary furnace with a tall chimney. Street refuse has little value for manure on account of its very bulky character. It is too much diluted to be of any great value to the farmer. Mr. Pemberton: "Some 28 years ago, on

the Cunard steamers running from Halifax to Bermuda, they used a patent fuel, comto Bermuda, they used a patent fuel, composed of coal screenings and tar; it was furnished in the form of a brick, say 10 x 5 x 4 inches. We thought at first that we had something nice. It was fully equal to Sidney coal. It choked up the tubes and made much soot and fine ashes. It softened in the fire. It was not economical, though costing less than the best Welsh coal."

Mr. Allen: "A great many settings are

Mr. Allen: "A great many settings are capable of burning dust, &c., without the use of a blower, which is very bad for a boiler."

The Navy Yard tests of dust-fuel showed

The Navy Yard tests of dust-fuel showed that the saving produced by the use of the dust was only about equal to what was expended in pulverizing the coal.

The Gaslight Company at the foot of 12th street, (the Mutual) is using Mr. Hazelton's grate bar. It is of flat iron, and has ½-inch holes in it. Hot air is blown into the fur-

holes in it. Hot air is blown into the furnace. Two boilers are working with this bar. They make a wood gas, and the fuel

used is a sort of light and wet charcoal.

Dr. Van der Weyde: "The blower is only equal to a tall chimney. It is a mistake to suppose it has any injurious effect upon the boiler."

Hudson: "Peat fuel might be classed under the head of a dirt fuel. It was at one time proposed to combine peat with coal dust, but, unfortunately, where there was a peat supply there was no coal, and where they had coal there was no peat.

Dr. Van der Weyde spoke of the value of peat in Holland, its extensive use, the foolishness of patents for burning peat, which was as easily managed as wood, and of the fact then passed a compass needle along the bar. If there are no flaws, the change in polarity from one end of the bar to the other will be a than repaid by the value of the reclaimed land. One hundred and six lakes have been numbed dry in Holland. Harlem ed dry in Holland. Lake is the last one. A peat fire should be To test for flaws at the ends of a bar, it is a large one, in order to burn freely. In placed at right angles to the magnetic me-fire-places no grate is used, but the peat is put upon a plate, and there must be no draft to speak of. The fuel may be 3 or 4 feet is a most ingenious method of testing iron and steel, and deserves to be extensively ap-

In regard to the use of dust or slack, Mr. plied; yet it is practically unknown. Sutton said that it was burned all over New They were employing it in his own establishment; in fact, its use was so general as to hardly need notice. Under a Davis boiler, in Akron, Ohio, they changed from coal to dust, according to the relative price. If any one wished to burn dust, it was easy to do so by using a grate bar

shaped like an inverted V, thus: A The flat portion of the top should be about three quarters of an inch wide, and in the inclined sides there should be numerous holes to sup-

Several gentlemen then spoke of the use of clay to prevent the compressed fuel from running together and dropping through the grate bars. This was practiced in Holland, and also in England in the last century.

and also in England in the last century.

The difficulties in transportation of coal
dust were spoken of by Mr. Stetson, and
the fact that it was not profitably handled
mentioned to account for the fact that coal dust was not more extensively used. It is bulk. Even the winds will blow it from the cars, and the consequent losses are beavy.
The dust used here is mostly made in or about the city; its present price will hardly

Co. is used on their locomotives. The engineers say that they like good coal better, but that ordinary coal mixed with slack is freely as the best coal."

In discussion it was shown that to use dust in domestic heating furnaces was practicable to some extent, in combination with large coal. PROF. PLYMPTON ON TESTING WIRES BY

ELECTRICITY. Prof. Plympton's first experiment was

Prof. Plympton's airst experiment was made to demonstrate the peculiar char-acteristics of a compound bar of steel and iron made by the Combination Steel and Iron Co., of Chester, Pa., after the Wheeler An ordinary bar of soft iron was held in

the magnetic meridian and converted into a magnet by a blow. It was then reversed and its magnetism discharged by gentle blows. In this state it differs from ordinary iron in acting like a magnet on a mag-netic needle when it is held in the direction of the magnetic meridian, but like an ordinary bar of iron when in a horizontal position. This peculiar characteristic it re-tains for several days. The compound bars made by the Wheeler process by the Com-bination Steel and Iron Co. have this pecul-iarity—a constant characteristic of becoming magnetic in the magnetic meridian. The reason for this the professor did not attempt to explain, but merely demonstrated it oefore the club by means of several striking experiments.

Experiments.

The composite bar is made by drawing down a pile made up with a scrap steel center and an iron envelope. The bar then has a steel center surrounded by iron.

Mayer, of Stevens Institute, has shown, by

a very conclusive experiment, that while a bar of steel elongates upon becoming a mag-net, it does not change its volume; conse-quently the bar is in a state of strain. It is, therefore, possible that the compressed bar may be in a similar condition, so as to be easily acted upon by the earth's

The process is a simple one. It consists in charging a helix by means of a battery, and then passing the wire through the cen-ter of the helix; as it emerges it is passed beneath a dipping needle, balanced so as to remain horizontal. As the wire passes from the helix it is, of course, pretty strongly charged with magnetism. When a flaw passes beneath, the needle dips or moves. Any break in the continuity of the wire tends to the formation of poles, and hence there is a motion in the needle.

Mr. Hering, in testing bridge wires, could tell from the movement of the needle the ex-tent of the flaw, and the probable reduction of strength which the flaw would exhibit when tested for tensile strength. In some instances he came within 15 pounds of the actual breaking strain, and in no case, Mr. Paine, the engineer in charge, said did he vary more than 50 pounds from the figures. To locate the fault exactly he used to move the wire backward and forward beneath the needle. A horizontal needle will answer every purpose, and a 25 cent. compass will do just as well as any other.

The professor said that it was asserted to b applicable to plates and bars as well as wire.
Mr. Hering thought he could test any iron, but he himself was not so certain

that.

Dr. Van der Weyde said that he was greatly obliged to Prof. Plympton for bringing out this invention, for it is valuable. Unfortunately, it needs an electrician to try

these experiments properly.

The first germ of this method of testing was brought out by Saxby in 1868, in the London Engineer. His method was to place the bar in the magnetic meridian, and, by Harlem the location of the flaw as it passes alon large one, in order to burn freely. In placed at right angles to the magnetic me

> In the June number of the Manufacturer and Builder, 1869, in an editorial article, Dr. Van der Weyde presented the subject of testing iron by Saxby's method in a very clear manner, and illustrated the operation by engravings. As an example of the practical value of such tests, the Doctor mentioned a case where it was necessary to remove the iron journals from a large wooden roller. It was a question whether they were of short pieces, driven into the ends, or were formed on a continuous bar. By applying a magnet to one journal, polarwas discovered in the other. This settled the question of their continuity, and the which they were turned was driven out with a sledge

> Mr. Sutton detailed a case where a large number of boiler plates had to be tested in the far West by the hammer alone. New plates could not be obtained without months of delay. The supply ran short, and it was important to find the flaws in some of the condemned plates and cut them out. took many days for a single plate, and was very tedious. Had some method like those spoken of been at hand, the work would

have been more certain and vastly quicker.

Dr. Van der Weyde said in such a case as this the plate would have been placed with dust burned by the use of fine jets of air will down as the surface. Two magnets will develop magnets will develop magnets will as a battery.

Mr. Pemberton said that with a Jarvis furnace under a 6-foot boiler, Mr. Lorillard possibly this process may be made applicable.

Mr. Lorillard possibly this process may be made applicable and furnace under a 6-foot boiler, Mr. Lorillard possibly this process may be made applicable. a magnet at each end, and the needle passed

is using 75 per cent. of screenings and 25 per cent. of anthracite. These furnaces burn all sorts of refuse—pomace from cider presses, sawdust and similar materials.

Dr. Lambert: "The compressed fuel made by the Delaware and Hudson Canal Co. is used on their lecomotives. The arms."

The arms. T occasion to test a large number of eye bars for a Fink bridge. The method then in use was to suspend the bar and strike it with a hammer, and observe the tone and character This saved putting all the but that ordinary compressed fuel. It does not so good as the compressed fuel. It does not make quite as much steam nor burn as freely as the best coal."

bars into the testing machine. Several bars would ring properly, and yet, for various reasons, he was suspicious of them, and put them into the machine. In some cases they broke with 8000 or 9000 pounds per square inch. The external weld was perfect, forming a shell which surrounded the flaw. The magnetic method would have made the discovery of these perfectly simple and certain. Mr. Hering had used magnets in testing car axles.

### INDUSTRIAL ITEMS.

MAINE.

The Auburn foundry will probably be enlarged next season.

NEW HAMPSHIRE.

At the annual meeting of the Exeter Works, at Exeter, last week, the following directors were chosen: William W. Stickney, William Burlingame, Charles U. Bell John K. Burlingame and William B. Morrill The present organization comprises: Wm. W. Stickney, president; William B. Morrill, clerk and treasurer; George E. Lane and David M. Quinby, auditors. The capital stock of the company was increased to \$60,000. The officers' reports were very favorable and indicated a very prosperous business the past year, only limited by the capacity of the works.

VERMONT.

Sap spouts, though an indispensable neces sity in regions where the maple abounds, are somewhat of a novelty in other portions of the country. Originally they were made of wood—often of stems of elder from which the pith had been punched. The bucket which caught the flow from the tree was of wood, and was set upon the ground or against the root of the tree, as chance or the condition of the snow allowed. bar may be in a similar condition, so as to be easily acted upon by the earth's magnetism.

A method of testing wires for flaws by means of magnetism, is one brought out by Mr. Hering, an engineer from Crown Point, and was applied to the wires of the bridge.

The process is a similar condition, so as the condition of the show allowed. At the present time we suppose that 90 per cent. of all the spouts in use are iron. They are made by the million by Mr. C. C. Post, of Burlington. They are about 2½ inches long, and have a hook for holding the pail, which is no longer of wood. We do not know how heavy these little things are, but should higher that each one weighted less than an judge that each one weighed less than an ounce. Mr. Post makes a sap bucket with a flattened or hollow side. This enables it to hang securely upon the spout and rest against the tree, without danger of moving by the wind or the contents being accident-ally spilled. The sap bucket is supplied with a cover, which is so simple that every one wonders that it was not invented long ago. These are the maple-sugar maker's leading necessities, and are found in every corner of the country where maple sugar is made. The spouts, though small and lasting for years, are made by the ton, and there seems to be no end to the consumption. This is largely due to the increase in the maple-sugar production. A very marked improvement in the quality of the product has taken place within a few years, which is largely due to the use of a better quality of spouts, and to the replacement of the old-fashioned sap troughs by clean, covered buckets.

MASSACHUSETTS.

Oliver Edes & Son are to put a number of machines for the manufacture of zinc and

of machines for the manufacture of zinc and copper nails and tacks into their mill at Chiltonville (Plymouth).

The hands at the Wason car shops at Springfield are employed 12 hours a day, and there is talk of putting on two sets of men, so that the orders can be pushed night and day. A new wooden building 250 feet long and 45 feet wide has been put up for a paint shop.

RHODE ISLAND.

The Franklin Foundry and Machine Com pany, of Providence, have delivered 12 Foss & Pevey cards to the A. & W. Sprague Mfg. Co. of Augusta, Me. This is their sec-

minute. Large quantities of mud, sand and stones were drawn up from the bottom.

CONNECTICUT.

Buchu & Perle, New Haven, are obliged to run overtime to fill orders. They have just shipped to H. D. Smith & Co., of Plantsvillo, Ct., a large forge drop press, the ham-mer of which weighs 875 lbs. They are about to ship to E. Ketcham & Co., of New They are York, a large drop press for sheet metal work. This has a hammer of 1250 lbs. without die, and has a die space of 24 inches. NEW YORK.

The Chrome Steel Co., in the Eastern Dis trict of Brooklyn, report that under their new management they are having a most grati-fying business success. Mr. S. H. Kohn is in the market over 12 years, and has made a place for itself. It is being largely used in the manufacture of tools of all descriptions, locomotive springs. hurglar trace tions, locomotive springs, burglar proof safes, jail bars, &c. There are now nearly one hundred jails fitted with the chrome steel combination jail bar, and they are considered impregnable. It is said that no prisoner has ever been able to cut them. The chrome steel combination safe plate is also in great favor.

NEW JERSEY.

The recent fire which occurred at the file works of Johnson & Brother, Newark, will not seriously affect their operations, for their grinding and forging departments remain intaot. They are to enlarge their cutting department, and will thus be enabled to fill orders more promptly.

calk horse and mule shoe, which is said to be the only shoe made entirely finished and ready for cold shoeing. The company have now in full operation one set of machines, with a capacity of three tons of shoes every 10 hours; but, owing to the increased demand, have contracted for the immediate construction of two more sets. They have also arranged for the erection of an additional building to meet the requirements of their business, and hope soon to have the machines placed and at work. The following are a few of the points claimed as being superior to any other shoe manufactured. The fact of the shoe being ready for cold shoeing, does away entirely with the loss of time and expense required in toeing, heeling and fitting other makes of shoes. It is complete, with calk heels and clip well creased, and readily fitted without heating. The shoe is so creased and punched that it corresponds with the wall of the horse's hoof from toe to heel, and the crease being clean and of proper width and depth, and the holes punched throughout without burs, the nails do not become loose. The iron used in its manufacture is of superior quality, and by a combination with steel they obtain a wear ing surface of steel for the calk, heel and web, and preserve an elasticity for the shoe. For winter the calks and heels are sharp-ened for use. The works are located at 816 Richmond street. The officers of the company are: Wm. Gerhard, president; Thos. F. Dixon, treasurer; and James Hopkins, secretary, who are in daily attendance at the works, and will be pleased to give any information to parties interested.

The Philadelphia Smelting Company, Limited, find the demand for their deoxidized bronze steadily increasing. It has been successfully introduced and is extensively used for car and machinery journals car trimmings, harness, coach furniture. car trimmings, harness, coach furniture &c. Another department, which is becom ing one of considerable importance, is devoted to art and ecclesiastical metal work in brass and bronze. Some recent designs in altar work, pulpit and chancel rails are of remarkable beauty, and have attracted great attention.

Bradlee & Co., Philadelphia, have be unusually busy this winter, the demand for chains being sufficient to crowd their works to the fullest capacity. They have just completed a railway chain of 2-inch iron, 150 feet long, weighing 15,000 pounds, for a firm in Cooper's Point, N. J. They are now working on orders from the United States government lighthouse department. The chain called for is 17% stud cable for use on lightships, &c. They also have orders for all the chain used at Roach & Son's extensive shipbuilding establishment, Chester, Pa., six large steamships being under way at

It is rumored here that there is to be a considerable acquisition made to the iron works of Pottstown this coming spring and summer. Report has it that the Potts Bros. Iron Company, Limited, who have purchased the large pipe mill at Chester, will start it up on the first of March, and will erect an additional plate mill on the large lot adjoining their present works to manufacture iron for the pipe mill; also, that the Pottstown Iron Company has in contemplation the erection of a mill for the manufacture of pipe iron; also, that the Glasgow Iron Company are negotiating for the purchase of ground adjoining their works with a view to extension; and also that a new rolling mill is to be erected by certain capitalists in Potts-

At last there is a reasonable prospect that the Wheatland Iron Works will again be in operation, within a few months at least. We have not been able to obtain many par-ticulars as to who have purchased or leased ticulars as to who have purchased or leased the works, but understand it is an Eastern corporation, reported to be identified with the Erie Railroad Company. Notice was given last week in the Sharpsville Advertiser, by W. Bakewell, attorney and counsel for applicants, that application will be made to Governor Hoyt on Friday, February 11th, "for a charter of incorporation for the purposed corporation, under the name and style of 'The Wheatland Bessemer Steel Company;' and that the character and object of pany; and that the character and object of said corporation is the manufacture of iron and steel, or both." We hope nothing may We hope nothing may

and steel, or both." We hope nothing may intervene to prevent these works starting.

The Philadelphia Bridge Works, at Pottstown, have received contracts for building an iron bridge of six spans, 100 feet in length, and a draw span of 200 feet, for the New Orleans and Pacific Railroad Company; also for a bridge of three spans, of 150 feet in length each, for the Texas Pacific Railroad. Another contract has been received for making 350 tons of iron for the Pennsyl-vania Railroad Company's elevated branch. The firm now employs 208 men and runs

The committees of the Lehigh and Schuyl-kill Coal Exchanges in Philadelphia, on the 25th ult, resolved not to make any changes in line and city prices of coal for the month of February. The present rates for white ash coal at Schuylkill Haven are: Lump, steamoat, broken egg, stove and small stove. \$3 chestnut, \$2.75; pea, \$1.75. The plan of operations at the mines for February has not

ret been agreed upon.

A short distance from the village of
Danielsville, in Lehigh township, Northamppart of Pennsylvania. It is from 9 to 12 feet below the surface, and as near

The company who have commenced the manufacture of steam fire engines in Reading, will be known as the Spawn & Dennisson ufacturing Company, Limited. The capital of the company is \$25,000. They will employ from 20 to 30 hands until they erect permanent buildings, after which their facil-

Four hundred and fourteen and a half tons of pig iron were manufactured at the wick Furnace for the week ending January

The new stove foundry to be established The new stove roundry to be established in Reading, it is understood, will be conducted by the firm of Stauffer, McKnight & Co. The capital has been placed at \$50,000. A building has been secured on Pearl street, below Chestnut, for the purpose of a pattern

PITTSBURGH AND VICINITY.

The Carbon Bronze Company have an excellent run of orders for car bearings and are pleased with the outlook.

The Pittsburgh Forge and Iron Company are working full in all departments, and report a general stiffening up in prices.

A change has been made in the firm of Boyle & Hazlett, coke dealers and manufacturers. Mr. John D. Boyle, of this city, has purchased the interest of Mr. Samuel Hazlett purchased the interest of Mr. Samuel Hazlett in the firm for \$75,000. Mr. Hazlett owned one-fourth in the firm, and by his purchase Mr. Boyle becomes full proprietor with Mr. G. F. Rafferty, who had a half interest in the firm. The new firm will be known as John D. Boyle & Co. They own 300 acres of coal land and 261 ovens, and their production of coke is about 35 cars a day. All departments in Oliver Bros. & Phillips'

All departments in Oliver Bros. & Phillips' mill, in the Ninth ward, Allegheny, are running double turn. Some of the furnaces which had been idle for several months have been put on double turn lately.

Hussey, Howe & Co. are running their mills double turn, with a good run of inquiries. They do not expect any decided improvement in prices in the near future, although the market at present is very strong.

although the market at present is very strong.

The Volta Galvanizing Company have quite a number of good sized orders on hand, but are not running this week in consequence of a scarcity of sheet iron. They will have a good stock on hand by the beginning of next week and will then start up full blast. They have just received an order from Buffalo for 2000 bundles of galvanized iron. The prospects are very encouraging for this energetic firm.

A few days ago papers were signed by which the extensive steel making and working enterprise at Homestead, near this city,

ing enterprise at Homestead, near this city, became consolidated. This has been brought about by the death of the late Andrew Kloman, who filled the position of manager of the new Pittsburgh Bessemer Steel Comof the new Pittsburgh Bessemer Steel Company's works, at Homestead, and was proprietor of the adjoining large mill wherein his machinery would work up the steel into structural forms. His death changes all these relations, and by the new articles of agreement the Steel Company have secured the control and ownership of the Kloman mill, issuing new steck therefor, and appointing Mr. Wm. Clark, of the Solar Iron Works, as general manager. As an adjunct Works, as general manager. As an adjunct of the Bessemer plant, the Kloman mill will work up the steel produced into material for work up the steel produced into material for bridges in the, "Universal" mill invented by Mr. Kloman. The Bessemer plant, it might be added, will be in operation in two weeks, and will have a capacity of 60,000 tons of steel ingots per annum. The "converters" have a nominal capacity of four tons each, but will work up to five tons. The bydraulic granes are in perfect prochase.

but will work up to five tons. The hydraulic cranes are in perfect working order, and the whole plant a complete one.

Thomas Coffin & Co., Limited, Southside, were never more fully occupied than at present, having orders for pots and furnace material from every point of the compass.

They are the sole agents here for the best Missouric lay.

Missouri clay.

The Connellsville Crushed Coke Company,
J. H. Ferguson, manager, have met with
unforeseen difficulties in the crushing of the
hard coke of the Connellsville ovens. The machinery used was that used in the anthramachinery used was that used in the anthractic regions for breaking hard coal. But to break anthracite was one thing, and to crush coke proved another thing. Breakers and crushers that would have lasted a year and crushers that would have lasted a year with anthracite gave out in six weeks under the strain of reducing the flinty coke to the proper sizes for domestic purposes. Now machinery is now being negotiated for, and by July 1 the company will have a capacity of 75 cars per day. This company is the first to attempt the preparation of Connellsville coke for domestic use. There is already a large demand for the fuel.

The Pittsburgh Steel Casting Co., of Pittsburgh, are about to erect a Bessemer plant for the purpose of making steel castings and a superior quality of ingot steel. This plant

a superior quality of ingot steel. This plant will be on an improved plan, under patents, and the company claim that they will be able to save 50 per cent. in labor and make ordinary Bessemer steel, and, in forty minutes, change it into good open-hearth steel, or in one hour they can produce as good in quality and more uniform than crucible steel. They also claim that with a 5-ton converter and a 5-ton open-hearth furnace they can produce, in a given time, eight times the quantity of open-hearth steel that can be produced by the present process. The company invite parties interested to call at their works and examine the models, which are there on exhibition.

OHIO.

Sloan & Co., of Cincinnati, are manufac turing a very conveniently constructed de-vice for holding casters for sewing machines, chairs and other light articles of furniture. It is constructed of malleable iron, slotted for a sliding tongue, by which means it can be drawn in or extended to suit any length which very recently was found to contain be drawn in or extended to suit any length probably the finest strata of slate in this between the legs of machines, each being provided with three casters, one in front and two at the rear end. The article resem be estimated has an average depth of about bles the hind carriage of a wagon, with 60 feet. Since its discovery quite a number tongue extended forward, at the front end 60 feet. Since its discovery quite a number tongue extended forward, at the front end of parties have visited the premises, and of which there is but one wheel or caster. Thus it will be seen that, with a pair of those acquainted with the properties of slate do not hesitate in pronouncing it of the attached to the legs of a sewing mafinest quality, both for school and roofing chine, lathe or other light machine, it can be turned around and run in any direction with great facility. They also manufacture a device containing three casters, attached to a plate made in triangular form, with a circular bed in the center, into which table legs can be set without fastening, and thereby rolled around over the floor with great ease. Since the introduction of these casters and frames, the company have been increasing their business rapidly.

Mr. E. Robinson, of Cineinnati, has re-

cently commenced the manufacture of a neatly constructed article named the "Pre-

# DE-OXYDIZED BRONZE.

DE-OXYDIZED BRONZE (patented) is an alloy of LAKE COPPER and best ASIATIC TIN in any proportion required, so as to be either as ductile as copper, as tough as iron, or as hard as steel, according to the proportion of Copper and Tin used.

The process of making the alloy is what constitutes its superiority over any other known alloy of Copper and Tin or any other Bronze composition. The castings made from this metal, owing to its perfect fluidity when melted, possess great density, perfect soundness and homogeneity. Unlike certain bronze and other compositions, it can be handled without the least difficulty by any ordinary founder, as it flows like oil in pouring.

Thus the necessity and trouble of shipping patterns, the delay in receiving castings and the expense of the double charges of freight or express, such as attend the obtaining, in many cases, of Phosphor Bronze, are entirely avoided by ordering D. O. B. in ingots. Where this metal has superseded other compositions of similar character, it has endured three times as long. In a word, we claim that De-Oxydized Bronze not only has none of the objectionable features attributed to similar compositions, but that it possesses all their good qualities in addition to its own merits, and advantages peculiar to itself, such as the following summary will make clear:

- 1. ITS CREAT CONVENIENCE IN HANDLING as compared to Phosphor Bronze.
- 2. We claim for it SUPERIOR ANTI-FRICTION QUALITIES to any other known Brass or Bronze.
- 3. CREAT MALLEABILITY AND TENACITY.
- 4. Its homogeneousness and smoothness of surface render it capable of the HICHEST POLISH.
- 5. As before mentioned, we claim for it UNEQUALED ENDURANCE.
- 6. We claim that JOURNALS MADE of D. O. B. REQUIRE ONE-FOURTH LESS LUBRICAT-INC MATERIAL than any other composition yet known.

Finally, this metal has never failed to give more than satisfaction wherever used. To sustain our statements, the following testimonials will suffice:

Henry Disston & Sons, Saw, Tool, Steel and File Works, Front and Laurel Streets, you continue to make it the same quality, we shall use no other metal in our Engine Boxes. We therefore take pleasure in recommending it to Engine Builders in general.

Philadelphia Smelling Company, City:

Yours respectfully,

HOFF, FONTAINE & ABBOTT. Office of Union Brass Manufacturing Company,

GENTLEMEN: After a trial of eighteen months of your "DE-OXYDIZED BRONZE" as Journal Boxes in our

Gentlemen: After a trial of eighteen months of your "De-Oxydized Bronze" as Journal Boxes in our Rolling Mill, where great pressure is required, we take pleasure in recommending it as being superior to any we have heretofore used. Very truly,

Office of Eagle Iron Works, 1162 North Third Street,

Philadelphia Smelting Company:

Dean Sirs: In reply to your inquiry of yesterday as to our opinion of "De-Oxydized Bronze" for Railway Coach Trimmings, I beg to submit that we have used it up to present writing for the trimming of something over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liability to abrasion, and will not non-affinity with the gases of the atmosphere, which in embossed work is a great desideratum. To those willing to pay more in the first cost, we would confidently recommend "De-Oxydized Bronze" Trimmings as cheaper in the end.

Yours very truly,

J. HALL DOW, President.

This metal is used for the following purposes, and we can refer to large concerns in addition to above, through the New England and Middle and Western States, who are using it in preference to any other.

- 1. Engine, Car and Machinery Journals.
- 2. Pumps, Valves and Linings, Cylinders, Pinions, Cogs, Plungers, Crank Pins, &c.
- 3. Car Trimmings, Harness and Coach Furniture, House Hardware, Steam Fittings, &c.
- 4. Wire, Sheets, Rods and Tubes.

And for any other purpose that a handsome, durable and sound Bronze is required. We especially commend it to Railroad Companies, Car Builders, Machinists, Engineers and others requiring a Journal Metal that will stand the severest friction and the heaviest pressure.

Manufactured and for sale in Ingots and Castings by the

## PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STS., PHILADELPHIA, PA., U. S. A.

### GENUINE BABBITT.

Our Genuine Babbitt is superior to all other makes in the market in every particular. We guarantee it to be perfect in its Anti-friction qualities in machinery AT A SPEED OF 10,000 PER MINUTE, or at 1000 TONS PRESSURE for 10 YEARS. We append below testimonials from A1 houses justifying us in the above claims.

From J. L. Marsden, Supt., Blake Crusher Co., New Haven, Conn., and Farrell

From Witherby, Rugg & Richardson, Worcester, Mass.,

Foundry and Machine Co., Ansonia, Conn. Manufacturers of Wood Working Machinery. August 17, 1880.

The "Genuine Babbitt" we have bought from you gives perfect satisfaction in our Stone Breakers. We have it working in bearings 12 in. long and 5 in. diameter. One-half the revolution of shaft there is a pressure of 900 to 18. The other half 2½ tons. The shaft makes from 200 to 250 turns per minute. I think this is a very severe test, yet they have been running for more than one year.

\*\*Manufacturers of Wood Working Machinery.\*\*

November 20, 1880.

Send us 1000 pounds "Genuine Babbitt" divided into Bars as usual. We think the continuance of our trade with you in the face of the constant effort made by other parties to divert our patronage, is a sufficient recommendation of your goods. We speed some journals as high as 6000.

Yours truly, WITHERBY, RUGG & RICHARDSON.

From this it will be seen that it can have no superior, or even equal, as an Anti-Friction Metal in anything manufactured. We make besides all grades of Anti-Friction Metals,

Letter A, Guaranteed at a speed of 2000. Letter D, Used for Shafting.

Letter B, Guaranteed at a speed of 1000. Letter E, Used for Ag'l Implements, &c.

Letter C, Guaranteed at a speed of 800. Letter A L, For slow speed.

All our Metals are made from best Lake Copper, Asiatic Tin, Cookson's Antimony and best Refined Lead, and in all cases run free at melting heat, without drossing, and without any necessity for heating the journals into which they are poured.

### MANUFACTURERS' AND MACHINISTS' NAME PLATES, REAL BRONZE, FINISHED.

Patterns from \$3 upwards, according to Size and Style. Plates, \$3 per dozen and upward, according to Size and Style.

SKETCHES FURNISHED FOR APPROVAL BEFORE MAKING PATTERNS. We have a specialty in this line and produce a handsomer plate, at less money, than can be obtained elsewhere.

ART AND ECCLESIASTICAL METAL WORK IN BRASS AND BRONZE, CAS FIXTURES, ALTAR CANDLESTICKS, SANCTUARY LAMPS, CHANCEL RAILS, PULPITS, &c.

## PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STREETS, PHILADELPHIA, PA.

### Polytechnic Club of the American Institute.

DIRT OR DUST FUEL.

At the meeting of this club, on Thursday, January 20, 1881, the president, Mr. Stet-son, opened the general discussion by read-ing an item concerning the practicability of using dirt for fuel. Many experiments have been made for the purpose of finding the best method of burning coal dust, &c. Blowing dust into furnaces along with a constant supply of air, has been tried and found to work with very good success. Dr. Van der Weyde said that for two years past Harway's the deal works at Greenpoint have been using coal dust for fuel. They have no particular arrangement for accomplishing this purpose, save putting the grate bars close together and using a blower. Every other bar is made so that it can be moved to the for They cannot burn of the result. shake the fire. They cannot burn either anthracite or bituminous dust alone, but mix the two. They use three parts of anthracite and one of bituminous dust. The Eastern Transportation Co. has some 20 tugs engaged in towing barges through the Sound. All of these tugs burn coal dust. They get a draft towing barges through the Sound these tugs burn coal dust. They get a draft by means of a Sturtevant blower, and carry a fire 8 inches thick, it was said. The disadvantage of blowing dust in with the air is that it necessitates the use of very fine dust. The doctor said he had been connected with several plans for solidifying coal dust. Many of the processes made very good blocks. At the present time, the Delaware and Hudson Canal Co. were making the best and most canal control the magnetic meridian. The reason for this the professor did not attempt but merely demonstrated it occurred. softens, and when used on locomotives, drops through the grate bars into the ash pan, and when it gets upon the track still continues to burn. Many fires have in the past been caused by this.

Experiments have been made in burning street sweepings and similar dirt. A friend has a plan for separating the combustible portion from that which will not burn. The process is now being tried in a large sugar refinery in Brooklyn. Sometimes in the garbage and street sweepings, fuel enough does not exist to keep up a fire. In the other plans for burning garbage where the different portions were not separated, this was a ent portions were not separated, this was a serious matter. One man, at times, to keep up his fire, found it necessary to blow in bensine. My friend does not require a cupola, but can use an ordinary furnace with a tall chimney. Street refuse has little value for manure on account of its very bulky sharacter. It is too much diluted to be of

any great value to the farmer.

Mr. Pemberton: "Some 28 years ago, or the Cunard steamers running from Halifax the Cunard steamers running from Halifax to Bermuda, they used a patent fuel, composed of coal screenings and tar; it was furnished in the form of a brick, say 10 % 5 x 4 inches. We thought at first that we had something nice. It was fully equal to Sidney coal. It choked up the tubes and made much soot and fine ashes. It softened in the first. It was not economical though

in the fire. It was not economical, though costing less than the best Welsh coal."

Mr. Allen: "A great many settings are capable of burning dust, &c., without the use of a blower, which is very bad for a

The Navy Yard tests of dust-fuel showed that the saving produced by the use of the dust was only about equal to what was expended in pulverizing the coal.

The Gaslight Company at the foot of 12th street, (the Mutual) is using Mr. Hazelton's

grate bar. It is of flat iron, and has ½-inch holes in it. Hot air is blown into the furnoies in it. Hot air is blown into the furnace. Two boilers are working with this bar. They make a wood gas, and the fuel used is a sort of light and wet charcoal.

Dr. Van der Weyde: "The blower is only equal to a tall chimney. It is a mistake to suppose it has any injurious effect upon the boiler."

Mr. Hudson: "Peat fuel might be classed under the head of a dirt fuel. It was at one time proposed to combine peat with coal dust, but, unfortunately, where there was a peat supply there was no coal, and where they had coal there was no peat. Dr. Van der Weyde spoke of the value of

peat in Holland, its extensive use, the foolishness of patents for burning peat, which was as easily managed as wood, and of the fact that in Holland, after a peat-bog is ex-hausted, the resulting lake is pumped out, and the cost of the work more than repaid by the value of the reclaimed been pumped dry in Holland. Harlem the location of the flaw as it passes along. Lake is the last one. A peat fire should be a large one, in order to burn freely. In placed at right angles to the magnetic meces no grate is used, but the peat is put upon a plate, and there must be no draft to speak of. The fuel may be 3 or 4 feet

In regard to the use of dust or slack, Mr. Sutton said that it was burned all over New York. They were employing it in his own establishment; in fact, its use was so genestablishment; in fact, its use was so general as to hardly need notice. Under a Davis boiler, in Akron, Ohio, they changed from coal to dust, according to the relative price. If any one wished to burn dust, it ras easy to do so by using a grate bar

shaped like an inverted V, thus: 2 The flat portion of the top should be about threequarters of an inch wide, and in the inclined sides there should be numerous holes to sup-

several gentlemen then spoke of the use of clay to prevent the compressed fuel from running together and dropping through the grate bars. This was practiced in Holland, and also in England in the last century.

The difficulties in transportation of coal dust were spoken of by Mr. Stetson, and dust were spoken of by Mr. Stetson, and the fact that it was not profitably handled mentioned to account for the fact that coal dust was not more extensively used. It is as hard to handle on the cars as flour in bulk. Even the winds will blow it from the cars, and the consequent losses are heavy. The dust used here is mostly made in or about the city; its present price will hardly bay for its transportation from the mines. Mr. Allen said that, with improved settings, dust burned by the use of fine jets of air will

in the old style of furnaces. furnace under a 6-foot boiler, Mr. Lorillard possibly this process may be made applicable

burn all sorts of refuse—pomace from cider presses, sawdust and similar materials.

In discussion it was shown that to use dust in domestic heating furnaces was practicable to some extent, in combination with large coal.

PROF. PLYMPTON ON TESTING WIRES BY ELECTRICITY.

Prof. Plympton's first experiment was made to demonstrate the peculiar char-acteristics of a compound bar of steel and iron made by the Combination Steel and Iron Co., of Chester, Pa., after the Wheeler process.

An ordinary bar of soft iron was held in the magnetic meridian and converted into a magnet by a blow. It was then reversed and its magnetism discharged by gentle blows. In this state it differs from ordinary to explain, but merely demonstrated it oe-fore the club by means of several striking

experiments.

The composite bar is made by drawing down a pile made up with a scrap steel cen-ter and an iron envelope. The bar then has a steel center surrounded by iron.

Mayer, of Stevens Institute, has shown, by a very conclusive experiment, that while a bar of steel elongates upon becoming a mag-net, it does not change its volume; consequently the bar is in a state of strain. It is, therefore, possible that the compressed bar may be in a similar condition, so as to be easily acted upon by the earth's

magnetism.

A method of testing wires for flaws by means of magnetism, is one brought out by Mr. Hering, an engineer from Crown Point, and was applied to the wires of the bridge.

bridge.

The process is a simple one. It consists in charging a helix by means of a battery, and then passing the wire through the center of the helix; as it emerges it is passed beneath a dipping needle, balanced so as to remain horizontal. As the wire passes from the helix it is a course passes from pastly attended. the helix it is, of course, pretty strongly charged with magnetism. When a flaw charged with magnetism. When a flaw passes beneath, the needle dips or moves. Any break in the continuity of the wire tends to the formation of poles, and hence there is a motion in the needle.

Mr. Hering, in testing bridge wires, could

tell from the movement of the needle the ex-tent of the flaw, and the probable reduction of strength which the flaw would exhibit when tested for tensile strength. In some instances he came within 15 pounds of the actual breaking strain, and in no case, Mr. Paine, the engineer in charge, said did he vary more than 50 pounds from the figures. To locate the fault exactly he used to move the wire backward and forward beneath the needle. A horizontal needle will answer every purpose, and a 25 cent, compass will do just as well as any other. The professor said that it was asserted to be

applicable to plates and bars as well as wire. Mr. Hering thought he could test any iron, but he himself was not so certain about

Dr. Van der Weyde said that he was greatly obliged to Prof. Plympton for bringing out this invention, for it is valuable. Unfortunately, it needs an electrician to try these experiments properly.

The first germ of this method of testing

was brought out by Saxby in 1868, in the London Engineer. His method was to place the bar in the magnetic meridian, and, by tapping it, convert it into a magnet. He then passed a compass needle along the bar. If there are no flaws, the change in polarity from one end of the bar to the other will be ridian. It would then be neutral save at the flaws, which would show polarity. This is a most ingenious method of testing iron and steel, and deserves to be extensively applied; yet it is practically unknown.

In the June number of the Manufacturer and Builder, 1869, in an editorial article, Dr. Van der Weyde presented the subject of testing iron by Saxby's method in a very clear manner, and illustrated the operations by engravings. As an example of the practical value of such tests, the Doctor mentioned a case where it was necessary to remove the iron journals from a large wooden roller. It was a question whether they were of short pieces, driven into the ends, or were formed on a continuous bar. bar on which they were turned was driven

ut with a sledge.

Mr. Sutton detailed a case where a large number of boiler plates had to be tested in the far West by the hammer alone. New plates could not be obtained without months of delay. The supply ran short, and it was also in great favor. important to find the flaws in some of the ndemned plates and cut them out. took many days for a single plate, and was very tedious. Had some method like those spoken of been at hand, the work would have been more certain and vastly quicker. Dr. Van der Weyde said in such a case as this the plate would have been placed with a magnet at each end, and the needle passed over the surface. Two magnets will develop

neers say that they like good coal better, but that ordinary coal mixed with slack is not so good as the compressed fuel. It does not make quite as much steam nor burn as freely as the best coal."

In discussion it was shown that to use broke with 8000 or 9000 pounds per square inch. The external weld was perfect, forming a shell which surrounded the flaw. The magnetic method would have made the discovery of these perfectly simple and certain.

Mr. Hering had used magnets in testing lete, with calk heels and clip well creased and readily fitted without heating. The car axles.

### INDUSTRIAL ITEMS.

MAINE.

The Auburn foundry will probably be enlarged next season.

### NEW HAMPSHIRE.

At the annual meeting of the Exeter Works, at Exeter, last week, the following directors were chosen: William W. Stickney, William Burlingame, Charles U. Bell, John K. Burlingame and William B. Morrill. John K. Burlingame and William B. Morrill. The present organization comprises: Wm. Stickney, president; William B. Morrill, clerk and treasurer; George E. Lane and David M. Quinby, auditors. The capital stock of the company was increased to \$60,000. The officers' reports were very favorable and indicated a very prosperous burning the processing limited by the business the past year, only limited by the capacity of the works.

### VERMONT.

Sap spouts, though an indispensable neces sity in regions where the maple abounds, are somewhat of a novelty in other portions are somewhat of a novelty in other portions of the country. Originally they were made of wood—often of stems of elder from which the pith had been punched. The bucket which caught the flow from the tree was of wood, and was set upon the ground or against the root of the tree, as chance or the condition of the snow allowed. At the present time we suppose that 90 per cent. of all the spouts in use are iron. They are made by the million by Mr. C. C. Post, of Burlington. They are about 2½ inches of Burlington. They are about 2½ inches long, and have a hook for holding the pail, which is no longer of wood. We do not know how heavy these little things are, but should judge that each one weighed less than an judge that each one weighed less than an ounce. Mr. Post makes a sap bucket with a flattened or hollow side. This enables it to hang securely upon the spout and rest against the tree, without danger of moving by the wind or the contents being accidentally spilled. The sap bucket is supplied with a cover, which is so simple that every one wonders that it was not invented long. one wonders that it was not invented long ago. These are the maple-sugar maker's leading necessities, and are found in every corner of the country where maple sugar is made. The spouts, though small and lasting for years, are made by the ton, and there seems to be no end to the consumption. This is largely due to the increase in the maplesugar production. A very marked improve-ment in the quality of the product has taken place within a few years, which is largely due to the use of a better quality of spouts, and to the replacement of the old-fashioned sap troughs by clean, covered buckets.

### MASSACHUSETTS.

Oliver Edes & Son are to put a number of machines for the manufacture of zinc and copper nails and tacks into their mill at Chiltonville (Plymouth).

The hands at the Wason car shops at

Springfield are employed 12 hours a day, and there is talk of putting on two sets of men, so that the orders can be pushed night and day. A new wooden building 250 feet long and 45 feet wide has been put up for a paint shop.

### RHODE ISLAND.

The Franklin Foundry and Machine Company, of Providence, have delivered 12 Foss & Pevey cards to the A. & W. Sprague Mfg. Co. of Augusta, Me. This is their second order.
The machinery built for the Atrato Min-

ing Company by the Herreshoff Manufac-turing Company, of Bristol, was tested at the company's dock last week. The large regular. If a flaw occurs, there will be a the company's dock last week. The large tendency to form poles, and hence the centrifugal pump was started, throwing an needle will show disturbances, indicating 8-inch stream, or about 2000 gallons per minute. Large quantities of mud, sand and stones were drawn up from the bottom.

### CONNECTICUT. Buchu & Perle, New Haven, are obliged

to run overtime to fill orders. They have just shipped to H. D. Smith & Co., of Plantsjust shipped to H. D. Smith & Co., of Finish-ville, Ct., a large forge drop press, the ham-mer of which weighs 875 lbs. They are about to ship to E. Ketcham & Co., of New York, a large drop press for sheet metal work. This has a hammer of 1250 lbs. without die, and has a die space of 24 inches. NEW YORK.

The Chrome Steel Co., in the Eastern District of Brooklyn, report that under their nev management they are having a most grati-fying business success. Mr. S. H. Kohn is the present proprietor. Chrome steel has been ends, or were formed on a continuous bar. in the market over 12 years, and has made by applying a magnet to one journal, polarity was discovered in the other. This settled the question of their continuity, and the bar on which they were turned was driven the manufacture of tools of all descriptions, locomotive springs, burglar proof safes, jail bars, &c. There are now nearly hundred jails fitted with the chrome steel combination jail bar, and they are considered impregnable. It is said that no prisoner has ever been able to cut them. The chrome steel combination safe plate is

### NEW JERSEY.

The recent fire which occurred at the file works of Johnson & Brother, Newark, will not seriously affect their operations, for their grinding and forging departments remain intact. They are to enlarge their cutting department, and will thus be enabled to fill orders more promptly.

### PENNSYLVANIA.

magnetism in a plate as well as a battery.

Scale would be shown by thinning of the plate, which would affect the needle, and Mr. Pemberton said that with a Jasvis plate, which would affect the needle, and Mr. I orillard possibly this process may be made applicable.

A new company has been organized in duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone duced electric lights into their mill at Philadelphia, to be known as the Keystone

is using 75 per cent. of screenings and 25 to steam boilers. Every change of form calk horse and mule shoe, which is said to be per cent. of anthracite. These furnaces would have an effect upon the needle which the only shoe made entirely finished and ready would have an effect upon the needle which would have to be studied. the only shoe made entirely finished and ready would have to be studied. burn all sorts of refuse—pomace from cider presses, sawdust and similar materials.

Dr. Lambert: "The compressed fuel made by the Delaware and Hudson Canal Co. is used on their locomotives. The engineers say that they like good coal better, but that ordinary coal mixed with slack is seen that ordinary coal mixed with slack is seen the same of the sound. This saved putting all the of the requirements of their company may be used to be studied.

Prof. Plympton said that in 1856-7 he had concasion to test a large number of eye bars for a Fink bridge. The method then in use hours; but, owing to the increased demand, hawve contracted for the immediate construction of two more sets. They have also arranged for the erection of an additional arranged for the requirements of their building to meet the requirements of their business, and hope soon to have the machines placed and at work. The following are a few of the points claimed as being superior to any other shoe manufactured. The fact of the shoe being ready for cold and readily fitted without heating. The shoe is so creased and punched that it cor-responds with the wall of the horse's hoof from toe to heel, and the crease being clean and of proper width and depth, and the holes punched throughout without burs, the nails do not become loose. The iron used in its manufacture is of superior quality, and by a combination with steel they obtain a wearing surface of steel for the calk, heel and web, and preserve an elasticity for the shoe. For winter the calks and heels are sharpened for use. The works are located at 816 Richmond street. The officers of the com-pany are: Wm. Gerhard, president; Thos. F. Dixon, treasurer; and James Hopkins, secretary, who are in daily attendance at the works, and will be pleased to give any information to parties interested.

The Philadelphia Smelting Company

Limited, find the demand for their deoxidized bronze steadily increasing. It has been successfully introduced and is extensively used for car and machinery journals, car trimmings, harness, coach furniture, &c. Another department, which is becoming one of considerable importance, is devoted to art and ecclesiastical metal work in brass and bronze. Some recent designs in altar work, pulpit and chancel rails are of remarkable beauty, and have attracted

great attention. Bradlee & Co., Philadelphia, have been unusually busy this winter, the demand for chains being sufficient to crowd their works to the fullest capacity. They have just completed a railway chain of 2-inch iron, 150 feet long, weighing 15,000 pounds, for a firm in Cooper's Point, N. J. They are now working on orders from the United States. working on orders from the United States working on orders from the United States government lighthouse department. The chain called for is 1% stud cable for use on lightships, &c. They also have orders for all the chain used at Roach & Son's exten-The sive shipbuilding establishment, Chester, Pa., six large steamships being under way at present.

It is rumored here that there is to be considerable acquisition made to the iron works of Pottstown this coming spring and summer. Report has it that the Potts Bros. Iron Company, Limited, who have purchased the large pipe mill at Chester, will start it up on the first of March, and will erect an addi-tional plate mill on the large lot adjoining their present works to manufacture iron fo the pipe mill; also, that the Pottstown Iron Company has in contemplation the erection of a mill for the manufacture of pipe iron of a mill for the manufacture of pipe iron; also, that the Glasgow Iron Company are negotiating for the purchase of ground adjoining their works with a view to extension; and also that a new rolling mill is to be erected by certain capitalists in Pottstown

At last there is a reasonable prospect that the Wheatland Iron Works will again be in operation, within a few months at least. We have not been able to obtain many particulars as to who have purchased or leased the works, but understand it is an Eastern corporation, reported to be identified with the Erie Railroad Company. Notice was given last week in the Sharpsville Advertiser, by W. Bakewell, attorney and counsel for applicants, that application will be made to Governor Hoyt on Friday, February 11th, for a charter of incorporation for the purposed corporation, under the name and style of 'The Wheatland Bessemer Steel Com-pany;' and that the character and object of pany; and that the character and object of said corporation is the manufacture of iron and steel, or both." We hope nothing may intervene to prevent these works starting. The Philadelphia Bridge Works, at Potts-

town, have received contracts for building an iron bridge ef six spans, 100 feet in length, and a draw span of 200 feet, for the New Orleans and Pacific Railroad Company; also for a bridge of three spans, of 150 feet in length. length each, for the Texas Pacific Railroad. Another contract has been received for making 350 tons of iron for the Pennsylvania Railroad Company's elevated branch.

The firm now employs 208 men and runs with and day. night and day.

The committees of the Lehigh and Schuylkill Coal Exchanges in Philadelphia, on the 25th ult, resolved not to make any changes in line and city prices of coal for the month of February. The present rates for white ash coal at Schuylkill Haven are: Lump, steam boat, broken egg, stove and small stove, \$3; chestnut, \$2.75; pea, \$1.75. The plan of operations at the mines for February has not et been agreed upon.

A short distance from the village of

Danielsville, in Lehigh township, Northamp ton Co., is located a lot of some 12 acres, the property of the National Slate Company which very recently was found to contain probably the finest strata of slate in this part of Pennsylvania. It is from 9 to 12 feet below the surface, and as near as can be estimated has an average depth of about of feet. Since its discovery quite a number of parties have visited the premises, and those acquainted with the properties of slate do not hesitate in pronouncing it of the finest cupitry better the properties. finest quality, both for school and roofing purposes.

The company who have commenced the

manufacture of steam fire engines in Read-ing, will be known as the Spawn & Dennisson Manufacturing Company, Limited. The capital of the company is \$25,000. They will employ from 20 to 30 hands until they erect permanent buildings, after which their facilties will be greatly increased.

The Phoenix Iron Company have introduced electric lights into their mill at Phoenixville, a machine capable of running ten

Four hundred and fourteen and a half tons of pig iron were manufactured at the War wick Furnace for the week ending January 22, 1881.

The new stove foundry to be established The new stove foundry to be established in Reading, it is understood, will be conducted by the firm of Stauffer, McKnight & Co. The capital has been placed at \$50,000. A building has been secured on Pearl street, below Chestnut, for the purpose of a pattern shop.

### PITTSBURGH AND VICINITY.

The Carbon Bronze Company have an excellent run of orders for car bearings and are pleased with the outlook.

The Pittsburgh Forge and Iron Com-pany are working full in all departments, and report a general stiffening up in prices.

A change has been made in the firm of
Boyle & Hazlett, coke dealers and manufacturers. Mr. John D. Boyle, of this city, has purchased the interest of Mr. Samuel Hazlett purchased the interest of Mr. Samuel Hazlett in the firm for \$75,000. Mr. Hazlett owned one-fourth in the firm, and by his purchase Mr. Boyle becomes full proprietor with Mr. G. F. Rafferty, who had a half interest in the firm. The new firm will be known as John D. Boyle & Co. They own 300 acres of coal land and 261 ovens, and their production of coke is about 35 cars a day. All departments in Oliver Bros. & Phillips' mill, in the Ninth ward, Allegheny, are running double turn. Some of the furnaces

ning double turn. Some of the furnaces which had been idle for several months have been put on double turn lately.

Hussey, Howe & Co. are running their mills double turn, with a good run of inquiries. They do not expect any decided improvement in prices in the near future, although the market at present is very

although the market at present is very strong.

The Volta Galvanizing Company have quite a number of good sized orders on hand, but are not running this week in consequence of a scarcity of sheet iron. They will have a good stock on hand by the beginning of next week and will then start up full blast. They have just received an order from Buffalo for 2000 bundles of galvanized iron. The prospects are very encouraging for this energetic firm.

A few days ago papers were signed by which the extensive steel making and working enterprise at Homestead, near this city, became consolidated. This has been brought about by the death of the late Andrew Kloman, who filled the position of manager of the new Pittsburgh Bessemer Steel Company's works, at Homestead, and was proprietor of the adjoining large mill wherein his machinery would work up the steel into structural forms. His death changes all these relations, and by the new articles of agreement the Steel Company have secured. these relations, and by the new articles of agreement the Steel Company have secured the control and ownership of the Kloman mill, issuing new stock therefor, and ap-pointing Mr. Wm. Clark, of the Solar Iron pointing Mr. Wm. Clark, of the Solar Iron Works, as general manager. As an adjunct of the Bessemer plant, the Kloman mill will work up the steel produced into material for bridges in the," Universal "mill invented by Mr. Kloman. The Bessemer plant, it might be added, will be in operation in two weeks, and will have a capacity of 60,000 tons of treal investment and the contract of steel ingots per annum. The "converters" have a nominal capacity of four tons each, but will work up to five tons. The bydraulic The "converters cranes are in perfect working order, and the whole plant a complete one.

Thomas Coffin & Co., Limited, Southside, were never more fully occupied than at present, having orders for pots and furnace material from every point of the compass. They are the sole agents here for the best

Missouri clay.

The Connellsville Crushed Coke Company,
J. H. Ferguson, manager, have met with
unforeseen difficulties in the crushing of the
hard coke of the Connellsville ovens. The machinery used was that used in the anthra-cite regions for breaking hard coal. But to break anthracite was one thing, and to crush coke proved another thing. Breakers and crushers that would have lasted a year with anthracite gave out in six weeks under the strain of reducing the flinty coke to the proper sizes for domestic purposes. New machinery is now being negotiated for, and by July 1 the company will have a capacity of 75 cars per day. This company is the first to attempt the preparation of Connellsville coke for domestic use. There is already a large demand for the fuel.

The Pittsburgh Steel Casting Co., of Pitts-

burgh, are about to erect a Bessemer plant for the purpose of making steel castings and a superior quality of ingot steel. This plant will be on an improved plan, under patents, and the company claim that they will be able to save 50 per cent. in labor and make ordinary Bessemer steel, and, in forty minutes, change it into good open-hearth steel, or in one hour they can produce as good in change it into good open-hearth steel, or in one hour they can produce as good in quality and more uniform than crucible steel. They also claim that with a 5-ton con-verter and a 5-ton open-hearth furnace they can produce, in a given time, eight times the quantity of open-hearth steel that can be produced by the present process. The company invite parties interested to call at their works and examine the models, which are there on exhibition.

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### OHIO.

Sloan & Co., of Cincinnati, are manufacturing a very conveniently constructed de-vice for holding casters for sewing machines, chairs and other light articles of furniture. It is constructed of malleable iron, slotted for a sliding tongue, by which means it can be drawn in or extended to suit any length between the legs of machines, each being provided with three casters, one in front and two at the rear end. The article resem bles the hind carriage of a wagon, with tongue extended forward, at the front end of which there is but one wheel or caster. Thus it will be seen that, with a pair of these attached to the legs of a sewing machine, lathe or other light machine, it can be turned around and run in any direction with great facility. They also manufacture a device containing three casters, attached to a plate made in triangular form, with a circular bed in the center, into which table legs can be set without fastening, and thereby rolled around over the floor with great ease. Since the introduction of these casters and frames, the company have been

increasing their business rapidly.

Mr. E. Robinson, of Cineinnati, has recently commenced the manufacture of a neatly constructed article named the "Pre-

# DE-OXYDIZED BRONZE.

DE-OXYDIZED BRONZE (patented) is an alloy of LAKE COPPER and best ASIATIC TIN in any proportion required, so as to be either as ductile as copper, as tough as iron, or as hard as steel, according to the proportion of Copper and Tin used.

The process of making the alloy is what constitutes its superiority over any other known alloy of Copper and Tin or any other Bronze composition. The castings made from this metal, owing to its perfect fluidity when melted, possess great density, perfect soundness and homogeneity. Unlike certain bronze and other compositions, it can be handled without the least difficulty by any ordinary founder, as it flows like oil in pouring.

Thus the necessity and trouble of shipping patterns, the delay in receiving castings and the expense of the double charges of freight or express, such as attend the obtaining, in many cases, of Phosphor Bronze, are entirely avoided by ordering D. O. B. in ingots. Where this metal has superseded other compositions of similar character, it has endured three times as long. In a word, we claim that De-Oxydized Bronze not only has none of the objectionable features attributed to similar compositions, but that it possesses all their good qualities in addition to its own merits, and advantages peculiar to itself, such as the following summary will make clear:

- 1. ITS CREAT CONVENIENCE IN HANDLING as compared to Phosphor Bronze.
- 2. We claim for it SUPERIOR ANTI-FRICTION QUALITIES to any other known Brass or Bronze.
- 3. CREAT MALLEABILITY AND TENACITY.
- 4. Its homogeneousness and smoothness of surface render it capable of the HIGHEST POLISH.
- 5. As before mentioned, we claim for it UNEQUALED ENDURANCE.
- 6. We claim that JOURNALS MADE of D. O. B. REQUIRE ONE-FOURTH LESS LUBRICAT-INC MATERIAL than any other composition yet known.

Finally, this metal has never failed to give more than satisfaction wherever used. To sustain our statements, the following testimonials will suffice:

Henry Disston & Sons, Saw, Tool, Steel and File Works, Front and Laurel Streets, you continue to make it the same quality, we shall use no other metal in our Engine Boxes. We therefore take pleasure in recommending it to Engine Builders in general.

Philadelphia Smelling Company, City:

Philadelphia Smelling Company, City:

HOFF, FONTAINE & ABBOTT.

Philadelphia Smelting Company, City:

Gentlemen: After a trial of eighteen months of your "De-Oxydized Bronze" as Journal Boxes in our Rolling Mill, where great pressure is required, we take pleasure in recommending it as being superior to any we HENRY DISSTON & SONS.

Office of Eagle Iron Works, 1162 North Third Street,

Philadelphia Smelting Company:

One marked peculiarity of this metal, when highly finished, is non-liability to abrasion, and over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-affinity with the gases of the atmosphere, which in embossed work is a great desideratum. To those willing to pay more in the first cost, we would confidently recommend "De-Oxydized Bronze" Trimmings as Walling to pay more in the first cost, we would confidently recommend "De-Oxydized Bronze" Trimmings as Yours very truly,

J. HOFF, FONTAINE & ABBOTT.

Office of Union Brass Manufacturing Company,

Chicago, Dec. 23, 1830.

Philadelphia Smelting Company, Limited, Twelfth and Noble Streets, Philadelphia, Pa.:

Dear Sies: In reply to your inquiry of yesterday as to our opinion of "De-Oxydized Bronze" for Railway coach Trimmings, I beg to submit that we have used it up to present writing for the trimming of something over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liability to abrasion, and willing to pay more in the first cost, we would confidently recommend "De-Oxydized Bronze" Trimmings as Yours very truly,

J. HOFF, FONTAINE & ABBOTT.

This metal is used for the following purposes, and we can refer to large concerns in addition to above, through the New England and Middle and Western States, who are using it in preference to any other.

- 1. Engine, Car and Machinery Journals.
- 2. Pumps, Valves and Linings, Cylinders, Pinions, Cogs, Plungers, Crank Pins, &c.
- 3. Car Trimmings, Harness and Coach Furniture, House Hardware, Steam Fittings, &c.
- 4. Wire, Sheets, Rods and Tubes.

And for any other purpose that a handsome, durable and sound Bronze is required. We especially commend it to Railroad Companies, Car Builders, Machinists, Engineers and others requiring a Journal Metal that will stand the severest friction and the heaviest pressure.

Manufactured and for sale in Ingots and Castings by the

## PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STS., PHILADELPHIA, PA., U. S. A.

## GENUINE BABBITT

Our Genuine Babbitt is superior to all other makes in the market in every particular. We guarantee it to be perfect in its Anti-friction qualities in machinery AT A SPEED OF 10,000 PER MINUTE, or at 1000 TONS PRESSURE for 10 YEARS. We append below testimonials from A1 houses justifying us in the above claims.

From J. L. Marsden, Supt., Blake Crusher Co., New Haven, Conn., and Farrell

From Witherby, Rugg & Richardson, Worcester, Mass., Manufacturers of Wood Working Machinery.

Foundry and Machine Co., Ansonia, Conn. August 17, 1880.

The "Genuine Babbitt" we have bought from you gives perfect satisfaction in our Stone Breakers. We have it working in bearings 12 in. long and 5 in. diameter. One-half the revolution of shaft there is a pressure of 900 to 18. The other half 2½ tons. The shaft makes from 200 to 250 turns per minute. I think this is a very severe test, yet they have been running for more than one year.

November 20, 1880.

Send us 1000 pounds "Genuine Babbitt" divided into Bars as usual. We think the continuance of our trade with you in the face of the constant effort made by other parties to divert our patronage, is a sufficient recommendation of your goods. We speed some journals as high as 6000.

Yours truly, WITHERBY, RUGG & RICHARDSON.

From this it will be seen that it can have no superior, or even equal, as an Anti-Friction Metal in anything manufactured. We make besides all grades of Anti-Friction Metals,

Letter A, Guaranteed at a speed of 2000.

Letter B, Guaranteed at a speed of 1000.

Letter C, Guaranteed at a speed of 800.

Letter D, Used for Shafting. Letter E, Used for Ag'l Implements, &c. Letter A L, For slow speed.

All our Metals are made from best Lake Copper, Asiatic Tin, Cookson's Antimony and best Refined Lead, and in all cases run free at melting heat, without drossing, and without any necessity for heating the journals into which they are poured.

## MANUFACTURERS' AND MACHINISTS' NAME PLATES,

REAL BRONZE, FINISHED. Patterns from \$3 upwards, according to Size and Style. Plates, \$3 per dozen and upward, according to Size and Style.

SKETCHES FURNISHED FOR APPROVAL BEFORE MAKING PATTERNS. We have a specialty in this line and produce a handsomer plate, at less money, than can be obtained elsewhere.

ART AND ECCLESIASTICAL METAL WORK IN BRASS AND BRONZE, CAS FIXTURES, ALTAR CANDLESTICKS, SANCTUARY LAMPS, CHANCEL RAILS, PULPITS, &c.

## PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STREETS, PHILADELPHIA, PA.

cious" coffee pot. It was invented at Columbus, and is covered by letters patent, dated April 6, 1880, and is largely in use in that city. It is designed so as to condense the steam arising from the coffee when boiling, and thereby prevent the aroma from escaping, and seems to fully answer the purpose for which it is intended. Since the commencement of its manufacture in Cincinnati it has been increasing steadily in demand, and at this time the works are runging to their full canacity.

columbus capitalists have decided to offer \$20,000 in money and seven acres of land as an inducement to a Hagerstown (Maryland) firm of agricultural implement manufacturers to locate there

Monday to put in a new hearth.

The Buckhorn Furnace has been in blast a

week and is doing nicely, making 15 tons of No. 1, we understand. The Buchtel Iron Company, the stockhold-

ers of which are Boston men, has been incorporated at Columbus. Capital \$2,500,000.

The Canton Spring Works employs 75 hands. The proprietors anticipate a lively spring trade.

The Peninsular Car Co., of Detroit, now employs 200 men at its newly acquired shops in Adrian. The company has bought more land and will enlarge the works at once.

The No. 2 stack of the Pioneer furnaces

was to have been lighted up again on the

The Green Bay Furnace is running steadily, making 22 tons a day. It has been in blast a year and four months and has made 12,000 tons of pig.

### The Acid Nickel Solution.

firm of agricultural implement manufacturers to locate there.

The Mansfield Machine Works, manufacturers of stationary and portable engines and circular saw mills, report their trade good. They ship goods largely to the West and Southwest States.

The Mt. Vernon Furnace blew out last acid solution are extremely satisfactory, and its simplicity commends it to favorable consideration:

DEAR SIR: I wish to call your attention again to the following facts in regard to my nickel-plating solution :

I. The Adams patent has been held by the courts to cover all neutral solutions of nickel, and especially those containing ammonia.

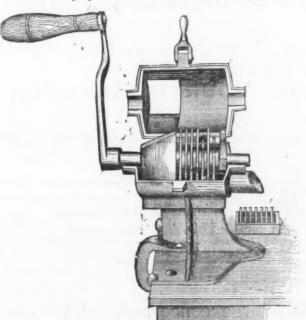
2. The Weston patent, which was captured by the United Nickel Company, thus

The Cherry Valley Iron Works, at Lectured by the United Nickel Company, thus tonia, are building a new heating furnace for their bar mill.

It is stated that a new large blast furnace is to be erected at Hanging Rock.

KENTUCKY.

At the Norton Iron Works repairs of the bed plate of the big engine are far enough advanced to enable the company to start the



THE KEISER MEAT CUTTER.

mill and nail factory in the early part of next

The Atlas Engine Works, Indianapolis, are running full, employing about 380 men, and are much crowded, especially with orders for their large Corliss and slide valve engine work. Being prepared to make both engines and boilers on a large scale, they are receiving many choice orders for entire outfits for steam-power. They are now building a 300-horse-power engine with boilers and shafting for a large lumber company in Minneapolis, and a 350-horse-power Corliss Minneapolis, and a 350-horse-power Corliss engine and other machinery for a similar

engine and other machinery for a similar enterprise at Winona, Minn.

Messrs. Chandler & Taylor, of the Phoenix Machine Works, Indianapolis, are largely increasing their facilities for building their light mulay saw mills. These mills are driven effectively by the ordinary threshing engine, and are said to be completely successful in doing custom or neighborhood sawing in docalties that cannot support a large class of mills.

Tean furnish this solution to you cheaper than any other nickel solution in the market, either alkaline, neutral or alloy, and by its use you can avoid payment of royalties. My patented solution is not an infringement on any of the patents owned or controlled by the United Nickel Company.

C. G. Pendleton,

### ILLINOIS.

A license has been issued by the Secretary of State to the Acme Press Company, of Rockford; capital stock \$25,000. The object

to to manufacture cotton presses.

The Continental Bolt Works, of Chicago, are running full force overtime, and are nearly 100 tons behind their orders.

The Chicago Steel Horse Shoe Company,

Brighton Park, have recently increased their working force and are now running their works full time.

works full time.

The Link Belt Machinery Company, of Chicago, recently shipped a complete outfit, consisting of elevators, conveyors and driving belts, for a grain warehouse, to Girard, III. The Lyman Manufacturing Company,

The Lyman Manufacturing Company, whose works are located at Grand Crossing, have resumed work, and have recently added more automatic machinery to their works. They are turning out two car loads of their barbed wire goods per day, and are a month behind orders. They are running their full force of employees. their full force of employees. The Ætna Iron Works have just completed their contract for the iron work on the County Court House, and are now expecting to receive the contract for the iron work for the city side of the building.

The McCormick Harvesting Machine Company have recently erected a substantial addition to their already extensive works, and in some departments are now running 13 hours out of the 24.

### TENNESSEE.

On the 19th ult., the No. 2 furnace of the 20 feet, and the fuel coke.

aill and nail factory in the early part of next reek.

My solution, in order to work, must necessarily be acid, and cannot contain any ingredients rendering it either alkaline or on all raw Coalton coal, making a daily average of 52 tons.

INDIANA.

neutral; and my patent, granted after the solution had been in court, and after the patent office had before it the decision in my favor, in the proceedings in which the United Nickel Company tried their best to imprison me, claims distinctly as an important feature the acidity of the solution.

portant feature the acidity of the solution.

In buying my solution, you buy a simple acid nickel solution, containing no ammonia, lime, nor any substitute therefor. It is the only solution which has been before the courts and has met the Adams patents. There are no royalties or shop-right fees to pay, but you can use it anywhere and everywhere. It is not a secret solution, for there are no obsure hints or precautions in the patent as to using it. The directions are plain and specific.

C. G. PENDLETON,

176 and 178 Center street, New York.

### The Keiser Meat Cutter.

We show in the accompanying cut the Keiser meat cutter, manufactured by the Kimball Shovel Co., Baltimore, Md. This machine is made on an entirely new principle. The blades are square on the edge, three cornered, and slightly curved on each point. The shaft has a spinal groove to which the blades are attached, being separated from each other by a steel washer. The cutting is so graduated that but one blade is cutting at a given time, calling for record cutting is so graduated that but one blade is cutting at a given time, calling for very little power. The knives work through a fixed comb of square edged steel blades, attached to the box, which gives a double shear cut. A very important feature is the feed on the shaft. Immediately under the hopper is a worm which rapidly carries the meat to the shaft knives which in turn meat to the shaft krives, which, in turn, owing to their peculiar shape, carry the meat through the comb, cutting as they re-volve, and passing the meat along until it is ejected from the cutter, leaving the can

Republic Ore.-The Republic Iron Company, of Cleveland, Ohio, the largest ore producing company in the United States, have fixed the price for their product for 1881 at \$10 per ton in Cleveland, the same price obtained for 1880. Pittsburgh manu-Southern States Coal, Iron and Land Company, at South Pittsburgh, made 92 tons of an advance in the price of pig iron. Dealers fron, which it is claimed is the largest product made by any furnace south of the Ohio River. The dimensions, we believe, are 70 x ore to be reduced. The action of the Republic Company rules the ore market.

20,000 Sold the Second Year. THE BEST ADJUSTABLE BAG HOLDER



PRICE ONLY \$1.50 PRICE ONLY \$1.50.
Sent free, on receipt of the price, anywhere in the United States.
Just the thing for the Farmer, Thresher, Miller, the Feed Store Grain, Potato, Guano and Phosphate dealers, Postmasters and Publishers, and to all others who use Sacks or Bags it is indispensable. A perfect and simple device, made of iron, and will last a life time. Sold by the Hardware trade everywhere. Orders solicited, The plat form is extra if wanted. Agents wanted everywhere. Agents wanted every where, Address L. JEFF. SPRENGLE, Sole Manufacturer.

Ashland, Ohio None can do without it for \$1.50. Send for a circular. Special discount to the trade

THE PATENT

Screw Window Balance. A PRACTICAL MODERN INVENTION.

As Cheaply Applied to the Window as the Sash Pulley Works on the edge of the sash, and Is not attached to it. INSTANTLY ADJUSTABLE, and re-adjustable after application, without removing the sash, to the weight of the sash by the adjusting Serew controlling the Steven A PRACTICAL MODERN INVENTION.



Price \$1 per set (four). Discounts to Dealers. Sample sets (four) sent to any address on receipt f \$1. postage free. Address

ROB'T B. HUGUNIN, Sole Maker, P. O. Box 523, Hartford, Conn.
For Sale in N. Y. by BUTLER & HUNTTING, 53 Dey Street

ACENTS IN ALL FOREIGN COUNTRIES.



119 South Fourth Street, HILADELPHIA ranch Office, 605 Seventh St. Washington, D. C.

H. HOWSON, Engineer and Solle C. HOWSON, Attorney at Law and Co



BEST PORTABLE MILL made for

### GLOBE HARDWARE CO. Manufacturers and Dealers in

## **General Hardware** 53 BEEKMAN ST.,

NEW YORK CITY.



THE BUCKEYE **UPRIGHT HAND** DRILL PRESS

Springfield, O.

RIEHLE BROTHERS. 50 S. 4th St., Philadelphia Improved Power & Hand



SAND SIFTER Every foundry show have one. Send for Price A liberal discount

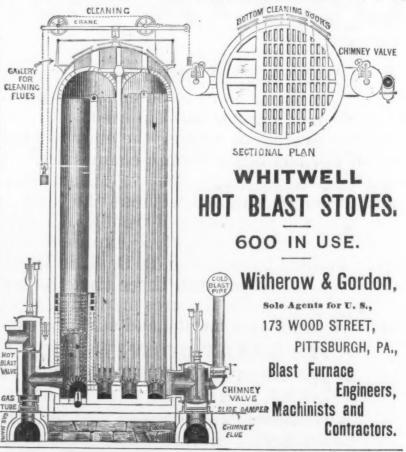
ALLSTON GERRY & CO., Iron and Metal Brokers 68 WALL STREET, NEW YORK.

P. W. GALLAUDET Banker and Note Broker,

Nos. 3 and 5 Wall Street, NEW YORK.

HARDWARE, METAL, IRON RUBBER, SHOE, PAPER AND PAPER-HANGINGS, LUMBER, COAL AND PAILROAD PAPER WANTED ADVANCES MADE ON BUSINESS PAPER AND OTHER SECURITIES,

50 PER CENT, SAVING OF FUEL. 50 PER CENT. INCREASE OF OUTPUT.





SEND for CATALOGUE and PRICES of HOUSEFURNISHING HARDWARE, MECHANICS' and GARDEN TOOLS, to ; ENTERPRISE MFG. CO., Geneva, Ohio.

A CONTRACTOR MANUFACTURERS OF

RAILWAY REPAIR SHOPS 1025 Hamilton St., PHILADELPHIA.

CHAMPION HOC RINGER RINGS and HOLDER. Only double Ring ev nvented. The on

CORN HUSKER 30

BROWN'S HOC AND PIG RINGER and RINGS.
Only single Ring in
he market that closes

CHAMBERS, BERING & QUINLAN, Exclusive Manufacturers, Decatur, Ill.

WENTWORTH'S NOISELESS SAW VISE Has a Flexible Rubber Cushion or Muffler between the Jaws, which prevents vibration and SPECIAL EXPORT PRICES.

C. N. MARCELLUS & CO., 69 Variek St., N. Y. City,

Manufacturers' Agents, and Dealers in Mill, Machinists' and Engin

## TRENTON LOCK & HARDWARE CO.,

TRENTON, N. J.

### LOCKS DOOR AND HARDWARE,

BRONZED IRON AND BRONZE METAL DOOR TRIMMINGS, BUTTS AND HARDWARE.

CAST BUTTS, DOOR BOLTS, WELL WHEELS, FLUSH BOLTS, SHUTTER BOLTS, PAD LOCKS,

BARN DOOR HANCERS, & RAIL, CRINDSTONE FIXTURES, SCREW & SIDE PULLEYS, NOISELESS PULLEYS, HAY FORK PULLEYS. SHELF BRACKETS,

PHILADELPHIA SLIDING DOOR HANGERS AND RAIL.

Having largely increased our facilities and line of gooods, we invite the attention of the

Illustated Catalogues Furnished on Application James M. Vance & Co., No. 211 Market St., Philadelphia. Agencies. James Marshall, No. 48 Warren St., New York.

## The Edwards Manufacturing Co.

DETROIT, MICH.

Union Spring Co.

OLEVELAND, OHIO.

YPSILANTI, MICH. SOLE MANUFACTURERS OF THE

REVERSIBLE AND ADJUSTABLE.

A Pronounced Success. all mechanics and builders cheapest Spring made. or pins to be broken easiest and most persomest, as well as the

Acknowledged by to be the best and No small castings or lost. The simplest, fectly adjusted. The handmost durable Spring made.

We Manufacture them in Four Sizes, either Coppered or Japanned.

No. 9-For Screen and Light Doors. No. 7-For Large Doors and Gates.

No. 8-For Medium Weight Doors and Gates No. 6-For Store Doors and Extra Heavy Gates

CORRESPONDENCE SOLICITED.

## THE SLAYTON RAZOR.



FOR CUTTING QUALITY. FOR TEMPER.

Silver, Nickel Plated. Blades of the Finest Steel in the World. Every Razor Fully Warranted.

1. C. TOWER, Thermometer Manufacturer, 39 Exchange St., Rochester, N. Y., Sole Agent.

L. C. TOWER Manufacturer of Thermometers

Of Every Description, Rechester, N. Y.

Established

KEYSTONE WORKS.

Centennial Award

## GEORGE GRIFFITHS,

MANUFACTURER OF



Shovels, Spades, Scoops, Coal Hods, &c.,

Nos. 511, 513 and 515 Locust St., PHILADELPHIA, PA., U. S. A.

Send for Price List.

### CEORGE C. TAFT.

Worcester, Mass., U. S. A., Manufacturer of

Improved Upright and Horizontal Self-Feed Drills,

For Blacksmiths' and Carriage Makers' Use.



This cut represents my No. 2 Improved Drill, double geared, so arranged that by moving the crank from A to B it will give a slow motion for heavy drilling to the drill spindle.

Union Spring Co. The Oldest Shot Tower in America.



SPARKS' American Chilled Shot,

Rivaling the English and all Others. STANDARD DROP & BUCK SHOT AND BAR LEAD. 121 Walnut Street, Philadelphia.

Bridgewater Iron Co.,1 Bridgewater, Mass.,

Manufacturers of SEAMLESS DRAWN COPPER AND BRASS TUBES, TACK PLATES, Forgings of every description.

Bridgewater Iron Co.'s HORSE NAILS. PRICE LIST.

Nos.... 5 6 7 8 9 10 Per lb..26# 23# 21# 20# 19# 18# Liberal discounts to the Trade, 73 Pearl Street, New York. 28 Broad Street, Boston.



CUYAHOGA FALLS, O. Tinned Belt Rivets and Burrs a specialty.



"RIGHT SPEEDY" **CORN SHELLER** 

Is the best Hand Sheller made; does the best work and works the best war-ranted five years. Agents Wanted in every County, Bample sent on receipt et \$5.00. Specially adapted for export.

Address Patentee and Sole Manufacturer, CURTIS GODDARD Alliance, Ohio, U.S.A

LAMBERSON'S

### PRICE BOOKS

Full Leather, \$7.50. Half Leather, \$6.50. Pocket Edition, Full Leather, \$3.50. DISCOUNT Bolt List, \$1.50. Screw List, \$0 cents. Leigh's Discount Book, 50 cents. Address all orders to Pope & Stevens, Genera Agents, oc Chambers Street. N. V.

at publisher's prices by Wm. Blair & Co. A. F. Shapleigh & Co., St. Louis C. S. James



# LIGHTNING

WEYMOUTH'S PATENT.



This knife is the best in use for cutting down hay and straw in mow and stack, cutting fine feed from bale, cutting corn stalks for feed, cutting peat and ditching marshes.

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for exports as well as home trade, and it seems destined to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each, of 50 pounds weigh suitable for shipping by land or water to any part of the world.

MANUFACTURED ONLY BY

### HIRAM HOLT & CO.,

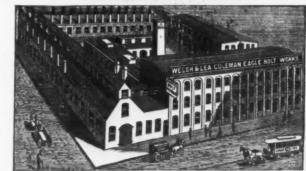
East Wilton, Franklin Co., Maine.

For sale by the Hardware Trade generally.

## H. S. MANNING & CO.,

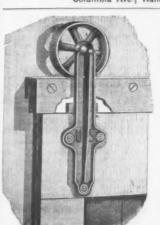


EAGLE BOLT WORKS.



WELSH & LEA

Manufacturers of NORWAY IRON CARRIAGE AND TIRE BOLTS, Columbia Ave., Hancock and Mascher Sts., PHILADELPHIA.



## THE U. S. WOOD TRACK BARN DOOR HANGINGS

This patent covers all rail with a recess in the under By using these Hangings you save the cost of iron

They cannot be thrown off the track. We also manufacture

Anti-Friction and Check-back Hangings, Rail, Stay Rollers, &c. Send for price list.

MEDINA MANUFACTURING CO., SAMSON & SWETT, Props., Medina, N. Y.

### Special Notices.

### SPRING TRADE SALE FOR 1881 BISSELL & WELLES. Auctioneers,

Large Trade Sale of Hardware, Housefurniahing Goods, Tinned and Enameled Ware, Wooden Ware, Pocket and Table Cutlery, &c. Commencing on TUESDAY, February 15, and continuing on WED-NESDAY, THURSDAY and FRIDAY, Feb. 16, 17 and 18, at 10 o'clock each day,

At 83 Chambers and 65 Reade Sts., N. Y. For the information of buyers we give a synops, as far as possible, of the line of goods to be

sis, as lat as possible, the late has a solid each day.

\*\*TUESDAY, February 15.\*\*—The sale of this date will comprise a large line of Shelf Hardware, Edge Tools, Hammers, Saws, Chisels, Hatchets, Files, Till, Drawer and Jail Locks, Strap and Thinges, Rein Snaps, Gimilet-Pointed Screws, Wrenches, Wrought Butts, &c. Also, by order of the New England Butt Co., over 20,000 Goz in Cast and Wired Broad and Narrow Butts, assorted sizes, together with other goods too numerous to mention.

mention.

WEDNESDAY, February 16.—Special sale of Housefurnishing Goods, Tinned and Enameled Ware, comprising large lines of Shoe, Scrub, Paint, Varnish and Whitewash Brushes, Slates, Maslin Kettles, Wooden Ware, Cedar Tubs and Pails, &c. Also, direct from factory, a very large assortment of Stamped, Tinned and Enameled Ware, consisting in part of a full line of Dish, Milk, Sauce and Fry Pans, Wash Basins, Preserving Kettles, Tea Kettles, Pails, Ladles, Tea, Table and Basting Spoons, &c.

Spoons, &c.

THURSDAY and FRIDAY, February 17
and 18.—First spring sale of American Table
Cutlery, seconds, by order of the Cutlery Association, comprising about 20,000 dozen Table Knives
and Forks, a large line of Carvers, Butcher Knives,
Plated Steel Knives, 12-08. Plate, Plated Tea and
Table Spoons and Forks. Also, a large line of
Foreign and American Pocket Cutlery, Scissors,
Shears, &c.

Foreign and american recase causes, coasses. Shears, &c.
We would call the attention of the trade to the line of goods offered at this sale as being worthy their attention. The entire catalogue will be sold without reserve. Parties who cannot be present can forward their orders, which will receive special standards and surphages made without charge. cial attention and purchases made without charge. Specifications of sizes of Butts will be sent to those

Missell & Welles, Auctioneors, 83 Chambers & 65 Reade Sts

### SECOND-HAND and NEW TOOLS FOR SALE LOW.

February List, No. 1.

- February List, No. 1.

  1 Pit Lathe, 31½ ft. swing, will turn a pulley as wide as 9 ft. face.

  2 Pit Lathe, 15 ft. swing, will turn a pulley 30 inch face, with gear-cutting attachment.

  3 Lathes, 21 in. swing, 3 ft. bed. Rod feed.

  2 Engine Lathe, 11 in. swing, 4 ft. bed.

  3 Foot Lathes.

  4 Hand Lathes.

  4 Hand Lathes.

  4 Hand Pinner, 24 in. x 4 ft. New.

  9 Planers, 30 in. x 5 ft., table moved by screw.

  4 Hand Pinner, 20 in. x 3 ft.

  1 Dimension Planer, 24 in. x 8 ft.

  5 Upright Drill Press, 16 in. swing.

  5 Suspension Drill.

  8 Boring Bar, 13½ in. diam., 10 ft long, self-feeding.

  8 Boring Bar, 13½ in. diam., 10 ft long, self-feeding.

  9 Forcing Machine, for forcing shafts off pulleys.

  1 Combined Punch and Shear.

  2 Steam Hammer. Cylinder, 11 x 36 in.

  2 8x18 Horizontal Engine. New.

  1 N Y. Safety Power Co. Engine, 8x12.

  McKeniel Cupolas, 4 ft. x 4½ inskie.

  Ladles, &c., &c.

  Cranes.

  3 Jig Saws.

  Pattern Makers' Lathes.

- Cranes.
  Jig Saws.
  Pattern Makers' Lathes.
  Post Drills.
  Lathe, 16 x 6.
  Upright Drills, 26 in. swing.
  Shaper, 9 in. New.
  Shaper, 2 in. stroke.
  Hand Punches.
  Trip Hammer. 100 lbs.
  Bait Pointer.
  Double-acting Power Presses.
  Single-acting ""
- 8 Single-acting "127 Foot Presses. Lot of Forges, Old Lathes, Flaner and Lathe Tools, Mandrels, Blacksmith and other Tools Wood Working Machinery.

### The Wood & Light Machine Co.

### PATTERNS Of Machinists' Tools are for sale at very low price

The Geo. Place Machinery Agency 121 Chambers and 103 Reade Sts., NEW YORK.

### Wanted.—Traveling Agent.

A .man well versed in mechanics, and accur tomed to selling machinery and supplies to mills foundries, machine shops, mines, railroads, &c. Address, with reference, and state what compenexpected MACHINERY. Office of The Iron Age, 220 S. 4th St., Phila., Pa.

### Wanted.

To Manufacture Specialties for the Railway Trade,

by an old established firm, with ample facilities. Address,

Office of The Iron Age, 220 S. 4th St., Phila., Pa

### Wanted.

One Second-hand Engine Lathe, 28 in. or 24 in. swing, 16 ft. between centers. Also one Pit Lathe. Please address, stating price and condition of machinery

HYDE, KLINE & CO., Ridgway, Pa.

### For Sale. A Valuable Magnetic Iron Ore Property

on Lake Champlain, immediately adjoining Cheever ore bad. Apply to GEORGE G. SAMPSON, 55 Pine street, N. Y.

No. 81 Murray Streeet.

### NOTICE.

NEW YORE, Feb. 1st, 1881.

We, the undersigned, have this day formed a co-partnership under the Firm name of BROWER & LEEDS, for the transaction of business as Harlware Manufacturers' Agents.

JOHN BROWER.

ROBERT LEEDS.

WANTED.—To form a partnership in the general Hardware Business, by a man having experience to place against capital. Very best references. Address, "B." No. 377 North Delaware L. Indianapolia, Ind.

### Special Notices.

## Second-Hand and New Machinists' Tools.

one 2-Spindle Profiling Machine. Good as new, One Engine Lathe, 90 in. x 20 ft. Ames, new.
One Engine Lathe, 50 in. x 21 ft. Ames, new.
One '' 32 in. x 16 ft. Ames, new.
One '' 24 in. x 12 ft. Ames, new. Two Engine Lathes, 24 in. x 15 ft. Double head chair

One Engine Lathe, 19 in. x 10 ft. Pond, new One " " 16 in. s. x 6 ft. Ames, new.
One Engine Lathe, 15 in. x 6 ft. Cady, good order.
One " " 15 in. x 5½ ft. Lathe.

One 13-in. stroke Slotter. Betts. Two Gould Milling Machines. Two No. 2 Pratt & Whitney Millers. Lincoln. Two Manhattan Millers. One Gear Cutter, 36 in. Puinam.

24 in. Could. One " 24 in. Could.
Six Hand Lathes, 11, 14 and 16 in. s. x 434 to 7 ft. bed.
Gne 24-in. Shaper. Hendey Mch. Co., new.
One 9 in. " Hewes & Phillips.
One 15-in. stroke Shaper. Hendey Mach. Co., new.
One 16-in. 4 ft. Florer. Armes A. P. Co., new.

One 24 in. x eft. Planer. Ames, new One 24 in. x cft. Planer. Ames, new.
One 24 in. x 5ft. Planer. Whitcomb. new.
One 24 in. x 5ft. Moore & Wyman.
One 6-Spindle Drill. Garvin, Å r.
One 34 in. Drill, Bk. Geared.
Two 24 in. Drill, bk. geared or self-feed. Ames, new.
Three 20 in. Drill, bk. geared and self-feed. L.W. Pond.;
One 6-Spindle Horizontal Drilling Machine.
One 6-Spindle Horizontal Drilling Machine.

One 5-Spindle Horizontal Drill. One No. 4 Wilder Punch Press. New. Geared. One No. 6 Belting, Shafting, Pulleys and Miscellaneous Machin

E. P. BULLARD, 14 Dey St., New York

Akron Iron Co.'s Hot Polished Shafting.

### BOILERS AND ENGINES FOR SALE.

Two Horizontal Boilers, 42 in. x 10 ft.; one has 9 2-in. tubes, the other 18 4-in. tubes; second

Two Horizontal Boston, 4 28 4-in, tubes; second hand.

New 30 H. P. Locomotive Boiler.

New and second-hand Vertical Boilers, 3 to 40 H. P.

New Vertical Engines, 5 x 6, 6 x 6, 7 x 6, 12 x 12.

Second-hand Vertical engines, 4 x 6, 7 x 10, 8 x 8.

Second-hand Horizontal Engines, 11 x 14, 12 x 24, 7 ½ x 12, 6 x 16, 15 ½ x 30.

New Horizontal Engines, 7 x 22, 8 x 18, 10 x 13. Full description of any of these on application.

A. G. BROOKS & WINEBRENER, 261 North Third St., Philadelphia.

### An Excellent Business Opening FOR A SHORT TIME ONLY.

The advertiser, having just completed extensive

### Specialty in Iron and other Metals. Sales for which are practically unlimited, and for

which he has the sole right, can employ from \$10,000 to \$50,000 additional capital, in cash or credits. No competition. Profits large and certain. For interview and particulars, address Post Office Box 2776, Philadelphia, Pa.

### For Sale.

One 18 in. Puddling Mill. Townsend's make. Four rolls, heavy fly wheel, breaking spindles and housings.
One 9 in. Rolling Mill. Townsend's make. Two speeds, 6s rolls, housings complete, in fair order.
Two 50 in. Turbines. Reynolds. Valuable details, nearly new.
One pair large Shears, fly wheel, bed plate and pulley. 

### Wanted.

Six experienced TRAVELING HARDWARE SALESMEN, for Ohio, Indiana and Michigan Address DETROIT.

Office of The Iron Age, 83 Reade St., New York

### Wanted.

To correspond with some manufacturing hous who wish a Western agency, by a reliable firm who have men on the road. We desire a line of goods selling to the Hardware trade. Address Z, care of Henry Smith, Office of The Iron Age, 36 & 38 Clark St., Chicago

For Sale, Rolling Mill, favorably located in the State of New York. Has been used for making merchant iron and railroad fastenings.

This mill is in comp'ete working order H. C. BRIGGS, 71 Rutgers Slip, New York, N. Y.

### Wanted.

### Manufacturing Business.

The undersigned desires to invest \$10,000 in a good manufacturing business, and take an active interest in the work.

Address, with particulars,
Office of The Iron Age, 83 Reade st., New York.

HAVE YOU READ THIS? JENNINGS' DISCOUNT TABLES.

JENNIARS DISCUENT TABLES,

"\$ to 85 f and all the combinations."
We find them correct and wonderfully "labor saving."—Sargent & Co. New York.

"Your discount tables are all you claim for them."
T. W. Root, with Russell & Erwin Mfg. Co., Toledo. O.
Counting House Edition.

\$2 co
Pocket Edition, Cloth Bound.

Loo
Pocket Edition, Paper Covers.

Currency may be sent by mail at publishers' risk.

Address.

B. H. JENNINGS, Deep River, Conn.

A THOROUGHLY PRACTICAL AND ABLE Manager of Blast Furnaces desiree a position. Understands management of furnaces and machinery from top to bottom. Best references as to character and ability.

P. O. Box 3612, New York.

### Special Notices.

## Rolling Mill for Sale. SPECIAL NOTICE TO IRON MEN.

A Rare Opportunity for Investment.

The undersigned Assignee and Trustee of the RIVERSIDE ROLLING MILL COMPANY, a corporation organized under the laws of Ohio, invite proposals for the purchase of the property and real estate of the above-named Rolling Mill Company.

The opportunity is one of the rarest for Rolling Mill and Iron Men. The Mill is a new one, and is located in the village of Riverside, just outside of the corporate limits of Cincinnati. It has excellent river and railroad facilities, probably unsurpassed. The Plate Mill has capacity for a very large product, particularly of Boiler Plate of large dimensions. There are also a sixteen-inch Bar Mill and a Guide Mill, both having full complement of rolls. The Bar Mill and Guide Mill have not been set up. The works have been in operation but a few months, and already have a large and lucrative custom. It has had more orders than could be filled, and lucrative custom. It has had more orders than could be filled, and is at present in operation, more recently under the practical direction of Mr. Wm. H. Carruthers. The mill was built under the superintendence of one of the best men in the country.

### AARON A. FERRIS, Assignee, W. H. CARRUTHERS, Trustee,

of the Riverside Rolling Mill Company,

Cincinnati, Ohio.

### For Sale.

Hardware Business of 20 years' standing. Stock will invoice about \$10,000. Fresh and in good con dition. To a party with the money this is an opportunity that seldom offers.

For particulars inquire of JOHN BINDLEY.

186 Federal street,

### Allegheny City, Pa. For Sale.

Stock of hardware, stoves and implements, and store furniture, in one of the best towns in Kansas.

HARDWARE, Box 366, Salina, Kansas

### For Sale.

HARDWARE.-The controlling interest or the whole of a Jobbing Hardware House, already established and doing a profitable business; located in one of the large Western cities. For further Office of The Iron Age, 83 Reade St., New York.

### For Sale.

LARGE SLOTTER, 6 ft. between Columns, 4-ft. Table, stroke 18 in., ind. cross and circular movements. A heavy, well-built tool; in first-rate or der; will be sold low. Photo. on application A. G. BROOKS & WINEBRENER, 261 N. Third street, Philade

### FOR SALE.

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

A. W. WHEELER,

141 Lake St.. Chicage, 111.

### Desk Room To Let.

At 110 Chambers St., New York, on the ground floor.

W. C. HARLOW.

### One-Thousand-Pound STEAM HAMMER

FOR SALE. In good order, and can be seen at our works. WOOD, SMITH & CO. Fort Plain, N. Y.

Chilian Mill for Sale,

### One Double Chaser Chilian Mill, complete with gearing for driving it. Suitable for grinding ores. fire-brick, cinders, &c.

Sketch with measurements on application.

A. G. BROOKS & WINEBPENER,

261 N. 3d st., Philadelphia.

### Notice.

To Manufacturers of Farming Tools. I want a party to manufacture a NUMBER ONE HAY KNIFE on Royalty, or will sell the patent on reasonable terms. Address asonable terms. Address A. ZIMMERER, Care Bischof & Zimmerer, Hardware, Nebraska City, Neb.

## Locomotives for Sale.

Four Locomotives, 4 ft. 81/4 in. gauge, built by Baldwin Locomotive Works for passenger service. Cylinders, 14x24; diameter of drivers, 58 in.; fuel, bituminous coal. All in good running order. W. S. WILSON, Address, 227 South 4th st., Philadelphia.

### Special Notices.

PHILADELPHIA, Jan. 1, 1881. TO THE TRADE.

The undersigned, the last representative of the firm of J. BARTON SMITH & CO., established in 842, finding it no longer possible to alone give roper attention to the increased demand for its elebrated brand of Files and Rasps, has trans ferred the business to the J. BARTON SMITH COMPANY. Thanking the trade for its liberal atronage in the past he respectfully solicits a ontinuance of the same for the new firm. CHARLES F. CRIPPS.

Office and Works of the J. BARTON SMITH Co.,

Office and Works of the J. Barton Smith Co., Nos. 211, 212, 217 New Street, Philadelphia, Jan. 1, 1881.

Referring to the above, the undersigned bez to assure the trade that they will faithfully preserve in the future the high reputation of the well-known goods of the late firm of J. Barton Smith & Co., and with largely increased facilities will be able to promptly fill all orders they may be favored with. In addition to the line of Files and Rasps, they will also manufacture a full line of Wood Saws, Butchers Saws, &c., of equal merit to the best made, soliciting the favors of the trade at lowest market rates. Respectfully, CHARLES F. CRIPFS, President.

GILBERT PARKER, Treas, and Genl. Agt.
New York Branch, No. 128 Chambers street, Wm. H. Bramhall, Manager, P. O. Box 2813.

### For Sale.

A large manufacturing establishment, consisting of Machine Shop, Foundry, Boiler Shop, Paint Shop and Store House. Good brick buildings, fully equipped with necessary machinery, a'l in first-class condition. Lot 19 rods long and 12 rods wide. A switch from the Erie Railway runs directly to the shop, and the New York Central Railroad is but a few rods distant. The railroad accommodations for shipping are unsurpassed. The shop has been doing a very large busines: in the way of repairs. No other machine shop nearer than Buffalo or Rochester. Located at Batavia, half way between Buffalo and Rochester. The property can be bought upon reasonable terms Cail upon or address, R. B. PEASE, Batavia, N. Y.

### SECOND-HAND

BOUGHT, SOLD & EXCHANGED.

BEECHER & PECK,

### Lock Box 122, New Haven, Conn To Manufacturers and Hardware Merchants.

WANTED. By a man of experience in positions of trust, who has a knowledge of the requirements of the export trade in American Hardware, having resided and traveled abroad for business, also held for several years past a responsible position in a manufactory, a new engagement as office man or travel to solicit trade and establish connections in foreign countries.

oreign countries.

Address, ENTERPRISE,
Office of The Iron Age, 83 Reade Street, N. Y. In a Western city, a general superintendent for an Agricultural implement Factory, embracing Wood, Machine and Blacksmith Shops, Foundry and Pattern Shop, now running and working se to 55 men. A thoroughly comperent and experienced man can have a permanent situation with or without an interest, as he might desire. State fully terms, locality and character of experience, age, and reference as to character and ability. Address, FARM MACHINERY CO., Office of The Iron Age, No. 83 Reade St., N. Y.

Office of The Iron Age, No. 83 Reade St., N. Y.

POR SALE.—NUT AND BOLT MACHINERY—
By the National Machinery Co., of Cleveland,
O.—The only specialists in this line in the U. S.
Two new Hot-pressed Nut Machines, small sizes.
Two new Hot-pressed Nut Machines, medium.
One 2d-hand Hot-pressed Nut Machines, small size.
Three second-hand Hot-bammered Nut Machines.
One 2d-hand Burdick Rivet and Heading Machine.
Six new Chapin Headers, for carriage and small work. Bolt Cutters, second hand—we have 12 of different makes, Wiley & Russell, Mayo, Merriman, &c. Three new small National Bolt Cutters, cut to 1½.
Two new No. 4 National Bolt Cutters, cut to 1½.
Two new No. 5 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, cut to 2½.
Two new No. 6 National Bolt Cutters, suitable for holtshops, &c. We manufacture complete outfits for bolt and nut shops, including such tools as Cam Headers, Upsetters (cold and hot). Bolt Pointers, Head Shavers, Nut Burrers, Tire blank machy., &c.

### For Sale.

7 x 10 DOUBLE ENGINE, Link Mo to . Suitable for Mine, Furnace or Quarry hoisting Been used one week only.

> A. G. BROOKS & WINEBRENER. 261 N. 3d St., Philadelphia.

### For Sale.

close an estate. The MACHINERY, FUR NACES, TOOLS, &c., of a Plate and Sheet Mill complete. Terms, one-third cash, balance long time if wanted. Address THOS. B. McKILLIP,

72 Washington St., Chicago, Ill.

### Wanted.

TO PURCHASE 8 or 10 NAIL MACHINES. Please address, stating size, condition and price, NAILER,

Care of Jos. D. Weeks,

Office of The Iron Age, 77 4th Ave., Pittsburgh, Pa

### Wanted.

Position in an iron works by a party of 25 years experience, having served as superintendent and finally as president in a well-known rolling mill. Can refer to business firms of highest standing. Dees not expect more than fair compensation.

Address,

Louisville Rolling Mill Co.,
Louisville, Ky.

### Wanted.

A person familiar with the outside work connected with a Coke Furnace in the country, such as understanding the management of ore an coal mines, surveying them, and hiring as well a directing general labor, &c. Best of reference required. Address P.O. BOX 32, Philadelphia, Pa.

Philadelphia, Pa.

Notice to Foundrymen,—An experience foreman, a bench and machine molder of years' experience at the trade, would like to hea of some responsible manufacturer in regard to situation as foreman or superintendent in a foundry. Good reference can be given.

Address,

No. 361 West 3d st., Cincinnati, Ohio.

### Special Notices.

Large Stock of New and Second-Hand

## MACHINERY.

Three pair Scales, weigh to 3500 lbs. Fairbanks. One Horizontal Corliss Engine, 200 h. p. One Delamater Sugar-house Engine, 26 in.x48 in. One Horizontal Engine, 15½ in.x30 in. Todd & Rafferty.

One Horizontal Engine, 15½ in, x3o in. Todd & Rafferty.
One Horiz'! Engine, 9 in. x 12 in. Erie Iron Works, Five Horizontal Engines, 9 in. x 12 in. J. & R. J. Four Horizontal Engines, 8 in. x 12 in. J. & R. J. Four Horizontal Engine, 3 in. x6 in.
One Fortable Engine, 5 in. x6 in.
One Fortable Engine, 5 in. x6 in.
One Hor. Tubular Boller, 6 tx4 ft. 67 4-in. tubes. Two Hor. Tubular Boller, 6 ft x14 ft. 50 4-in. tubes. Two Hor. Tub. Bollers, 5 ft. x14 ft., 50 4-in. tubes. Two Hor. Tub. Bollers, 4 ft. x13 ft., 34 4-in. tubes. Three Hor. Tub. Bollers, 4 ft. x13 ft., 34 4-in. tubes. One Steel Locomotive Boller, 25 H. P. Lot Shafting, Pulleys and Hangers.

### MACHINISTS' TOOLS.

One Lathe, 20 in, swing 10 ft, bed.
One Lathe, 15 in, swing 10 ft, bed.
One Milling Machine.
Two Hydraulic Presses, 3-in, ram, in perfect order.
One Planer, 22 in, 25 ft, bed.
One Planer, 22 in, 25 ft, bed.
One New Haven Drill. Will bore in center of 60 in.
Two Ensley Drills.
One Vertical Boring Mill, bore from 26 to 30 inches,
One Turn Table and Boring Mill, 11 feet between
One Tavis Boring Mill.

[Columns,
One Merrill Compressed Air Hammer, Hotchkiss
One Upright Drill, to the center of 64 in. [Patent,
One Merrill Compressed Air Hammer, Hotchkiss
One Upright Drill, to the center of 64 in. [Patent,
One Merrill Compressed Air Hammer, Hotchkiss
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One Merrill Compressed Air Hammer, Hotchkiss
One Upright Drill, to the center of 64 in. [Patent,
One Merrill Compressed Air Hammer, Hotchkiss
One Upright Drill Machines.

One
Eighteen Drilling Machines.
Ten Bench Lathes.
One Bogardus Mill, No. 5.
One Bogardus Mill, No. 2.
One Bogardus Mill, No. 2.
One Large Power Punch for bridge work.
One 9000 to Hydraulic Press and Pump.
One Dudgeon Beam Punch.
One hand Punch. Pope's patent.
Three Vacuum Tanks, 6 ft.x12 ft.
One hundred Vises.
Five Portable Forges.
Colton Drawing Machine.
One Guild & Garrison Pump, No. 3.
Six Hardick Pumps, from No. 0 to No. 4. New.
One Woodward Pump, No. 1.
7000 lbs. ½ Plate Iron, for gafes.
Two Bliss & Williams Presses.
Five smaller.

## A full line of Woodward Steam and Fire Pumps. One hand-power Paper Cutter. DROP PRESSES J. GRAY'S MACHINERY DEPOT.

37 Dey Street, New York, U. S. A. To Railroad Engineers, Importers and Others.

### DAVID OWEN,

Inspector of Steel and Iron Rails, Merthyr Tydfil, England,

Undertakes the inspection of Steel and Iron Rails, Permanent Way Materials, &c., &c., in England, Belgium and Germany. Thoroughly practical, of many years' experience. Can give very best of references from chief railroad engineers, merchants and others who have employed me to inspect their railroad materials during manufacture and delivery for the last to years. Correspondence solicited. Instructions by mail or cable punctually attended to.

### For Sale.

One pair CHILL ROLLS, 25 inches diameter, 13 inches long; necks, 16 inches diameter, 13 inches long; wabbier, 14 inches diameter, 7% neches long; ches long. Che pair PINIONS, 25 inches diameter, 30 inches coutside of shrouds; necks and wabblers same

as on chill rolls.
Six COUPLING BOXES, for above rolls and inions.

One POPPET VALVE ENGINE, so-inch bore,
foot stroke, with cast-iron fly-wheel in eight secdons, so feet diameter; rim of wheel, six sin,
fracture is now in reaction at our mill.

### ow in position at our mill, BRITTON IRON & STEEL CO., Cleveland, Ohio. For Sale.

FOUNDRY AND MACHINE SHOP. Estabshed 1842. Well stocked with Patterns and lous. Business good. Satisfactory reasons for lling. Address A. L. VAIL,

### Middletown, N. Y. L. SALOMON,

Upholsterers' Needles, Gilt Nails and Housefurnishing Hardware.

Agent for the Champion and Standard Knox No. 10 Murray St., New York. THOSE WISHING TO BUY OR HAVE FOR

### SALE SECOND-HAND PRESSES or DROP HAMMERS

will please communicate with N. C. STILES, Middletown, Conn

For Sale.

An old and well-established Hardware Business in a live town of 5000 inhabitants, in Southern Michigan. Stock in good condition, Will invoice about \$10,000. A rare chance for an active man to secure a good business.

## Address, E. D. & T... Office of The Iron Age, 83 Reade St., New York Europe.

### Matheson & Grant's

Address is

32 Walbrook, London, England.

als aln

E

Engineers and Commission Agents for all business relating to engineering and metals in Europe. Telegraph address.

MATHESON, WALBROOK, LONDON.

### The Sherman Process Co. 9 Pemberton Square, Boston, Mass.,

issue Licenses to use the Process for the Manufacture of Iron and Steel n the Bessemer Converter, Crucible, Siemens-Martin, Puddling, Blast and Cupola Furnaces.

The use of this Frocess improves the quality of the product, saves fuel and inbor, and does not re-quire any change in furnace or manner of working. See page 17 of The Iron Age of Oct. 25th, 277.

Deadwood.
Delaware, Lack, and Western.
Delaware & Hudson Canal...
Denver and Rio Grande.

Express—Adams...
Wells, Fargo...
" Wells, Fargo...
" United States.

Erie and Western.

Louisiana and Missouri

Pre

Wabash....

ome and Watertown

Western Union Telegraph...

Mobile and Ohio

Erie and Western

Excelsior Mining..

## Special Notices. SPECIAL BARGAINS.

### Portable Engines.

On Skids, Engines and Boilers Attached.

No. 2.-Washington Iron Works; 20 to 12-horse power; cylinder,  $7 \times 10$ ; centre crank; slide valve. Boiler 31 in. diameter; cpen bottom fire box; furnace, 25 x 38 in.; 42 3-in. flues, 43/2 ft. long. Weighs about 4800. Price, \$500.

No. 4.-Wood & Mann; 15 to 18-horse power; cylinder, 9 x 12; slide valve; center crank. Boiler 32 inches diameter; water bottom fire box; furnace, 26 x 37 in.; 28 3 in. flues, 7 ft. long. Weighs about 6800. Price, \$740.

### New and Second-Hand Stationary Engines.

No. 6.—Gibbs, Russel & Co.; rated 12 to 14-horse power; cylinder,  $7 \times 14$ ; slide valve; side stroke. This engine is mounted on a slab bed  $1\frac{1}{2}$  in, thick, but when bolted to a solid wooden block makes a very substantial engine. Weighs about 1800. Price, without governor, \$130; with governor, \$150.

No. 7.-Erie City Iron Works; rated 10 to 12-horse power; cylinder, 7 x 10; centre crank; relling valve; has link for reversing. Weighs about 2000. Price, without governor, \$175; with governor, \$200

No. 12.—Bay State Iron Works; rated 12-horse power; cylinder, 7½ x 12; center crank; slide valve. Weighs about 24co. Price, without governor, \$185; with governor, \$220.

No. 14.-Union Iron Works; rated 12 to 15-horse power; cylinder, 8 x 12; center crank; rolling valve. Weighs about 2500. Price, without governor, \$200; with governor, \$225. No. 22.-Wood & Mann; rated 12 to 15-horse

power; cylinder, 8 x 12; center crank; slide valve. Weighs about 2600. Price, without governer, \$215; with governor, \$240.

No. 29.-Gibbs & Sterrett; rated 15 to 18-horse power; cylinder, 9 x 12; center crank; rolling tions of governments. valve. Weighs about 3000. Price, without gov. ernor, \$230; with governor, \$260.

No. 33.—Innis Mfg. Co.; new engine; rated 15 to 18-horse power; cylinder, 9 x 12; center crank; piston slide valve. Weighs about 1000. Price. without governor, \$350; with governor, \$375.

No. 36.-Phoenix Iron Works; new engine; rated o-horse power; cylinder, 10 x 16; side stroke; slide valve. Weighs about 4200. Price, without governor, \$625; with governor, \$665. No. 37.-Harris Iron Works; new engine; rated

25 to 30-horse power: cylinder, 11 x 12; center crank; slide valve. Weighs about 3209. Price, without governor, \$500; with governor, \$530.

No. 38.-Phœnix Iron Works; new engine; rate-30 to 35-horse power; cylirder 12 x 12; sidestroke; slide valve. Weighs about 3300. Price, without governor, \$565; with governor, \$600.

### New and Second-Hand Boilers.

No. 44.- Watson & Monroe; tubular stationary; rated 15 to 18-horse power; 36 in. diameter; 30 3-in. flues, 8 ft. long. Weight, with fixtures, about

No. 44.- Petroleum Iron Works; portable; rated 25-horse power; 36 in. diameter; 30 3-in flues, 7 ft. long; fire box, 30 x 40 in. Weighs, with fixtures, about 4200. Price, \$325.

No. 49.--; portable; rated 20 to 25-horse power; furnace end, 41 in. diameter; waist, 35 in. diameter; fire box, 33 in. wide, 4 ft. long; 36 3-in. flues, 8 ft. long. Weight, with fixtures, about 5500 Price, \$500.

No. 52.-Erie City Iron Works; tubular station ary; rated 30-horse power; 44 in. diameter; 48 3-in. flues, 10 feet long. Weight, with fixtures, about 6300. Price, \$475.

No. 57.—Phoenix Iron Works; new tubular stationary; rated 30-horse power; 40 in. diameter; 38 3 in. flues, 12 ft. long. Weight, with fixtures, about 6100. Price, \$690.

No. 58.-E. C. I. Works; new tubular stationary rated 40-horse power; 44 in. diameter; 46 3-in. flues, 14 ft. long. Weight, with fixtures, about

We also have Vertical Boilers and Engines, from 2 to 20-horse power, constantly on hand.

## Lovegrove & Co.

152 North Third Street,

PHILADELPHIA. PA.

## Illustrated Catalogue

## Hardware, Cutlery, &c.

We have issued a very complete work of this kind, embracing Hardware, Cutlery, Sporting Goods, Hounfurnishing Goods, &c.; 1140 pages, with 5498 illustrations, also Lists, Tables, &c., making this book almost invaluable to Hardware Dealers. Price, \$15, sent by mail.

### Simmons Hardware Co., St. Louis, Mo.

For Sale.

## HARDWARE.

A wholesale and retail stock of Shelf and Heavy Hardware in one of our most promising Western cities. For further particulars address, Office of The Iron Age, 83 Reade St., New York.

## Sanderson Bros. Steel Co. ber of shares for sale by EDWARD FRITH & SON, 241 Pearl street, New York.

# Office of The Iron Age, Wednesday Evening, February 2, 1881.

Trade Report.

The financial markets have been very active during the past week, and there has been a great deal of heavy speculation. The principal drawers of sterling exchange have Kansas and Taxas ..... Keokuk and Des Moines. returned to the old method of quoting sterling, much to the satisfaction of purchasers, and the present rates are 4.83 and 4.86. The money market has been fairly easy, with 4 @ 5 % as the ruling rates on call loans at the Stock Exchange. Some borrowers have paid as high as 6 %, but this was exceptional.

Louisiana and Missouri.

Aske Shore.
Louisville and Nashville
Little Pittsburgh
Louisville, New Albany and Chic.
Michigan Central
Morris and Essex.
Metropolitan Elevated
Manhattan Elevated.
Marietta and Cinchnati Pref.

2d Pref. The importations of specie and bullion at this port during the week ending January were \$121,745, consisting of \$60,339, in gold and \$61,406 in silver, as against a total of \$175,042 for the week ending January 31 last year. The importations since the 1st of January and since the 1st of August New York Elevated ... Ohio... Pref. Omaha... compare as follows with the movement during the corresponding periods last year:

GoldSilver	1881.	\$554,120 320,915
Total	\$4,080,968	\$875,038
Gold	1880-81.	1879-80. \$75.582,095 3,298,429
Total	Rea 660 + 80	@=0 00a ras

Since last week government bonds have experienced a further fractional decline, State bonds have been quiet and firm. Railway bonds have advanced, and are in good demand. We give below the closing quota-

The stock market has been very active and extremely irregular, prices advancing and declining with surprising rapidity. The principal dealings have been in Western Union, the Coal shares, New York Central, Canada Southern, Northwest, Milwaukee and St. Paul, Ontario and Western, Wabash and Union Pacific. The closing quotations of active stocks are given below.

The following is an analysis of the bank totals of this week compared with that of

Loans Specie Legal t'd'rs Tot. reserve Deposits Reserve re-	66,484,100 16,395,600 82,879,700	January 29. \$310,682,200 66,264,100 17,087,900 83,552,000 302,508,300	Inc. Dec. Inc. Inc.	
quired	74,732,975	75,628,075	Dec.	895, 100
Surplus	8,146,725	7,923,925		222,800
Circulation,	18,345,500	18,330,700		14,800

For the week ended January 20:

Total for week Prev. reported.	1879. \$6,264,820 11,447,715	1880. \$11,753,252 24,068,959	1881. \$8,521,604 22,512,968
Since Jan. 1	\$17,712.435	\$35,822,211	\$31,034.572

Included in the imports of general merchandise for the week were articles valued

as follows:		
	Quantity,	Value.
Anvils	¥	\$17
Brass goods,	17	2,180
Bronzes	2.3	3,300
Chains and anchors	7.4	4,635
Copper	**	1,146
Cutlery	840	58,276
Pins	7	1,377
Guns	X49	22,250
Hardware	38	1,556
Iron, pig, tons	1,953	39.525
Iron, sheet, tons	14	1,112
Iron cotton ties	2,000	1,754
Iron ore, tons	6,435	25,675
fron, other, tons	615	19,500
Metal goods	167	20,031
Needles	13	3.897
Nickel.	25	8,917
Old metal		13,281
Percussion caps	30	3,845
Saddlery	21	3.548
Steel	13,129	51,000
Silverware	. 5	264
Tin, boxes	26,939	138,311
Tin, 7,152 slabs; 751,565 lbs		159,118
Wire	305	8,288
Zinc	55,125	2,457
WENGARD PROTUCTED OF	annorm.	

For the wee	k ended F	ebruary I	:
For the week Prev. reported.	1879. \$5,255,768 14,627,304	1880. \$6,322,878 17,430,859	1881. \$7,121,316 20,392.881
Since Jan. 1	\$19,883,072	\$a3,753,737	\$27.514.197

For week	k end	0	d	J	a	ı	ı	18	LI	.3	r	2	g	)	0		
Total for the Previously r																	
Total sir	ice Ja	B	u	8.1	7		8,	3	8	81	١,	0	0 1	0 0			. \$4,981,187
Same time in																	
Same time is	1879					0			0 .				0. 1		0	0.1	1,010.037
Same time is	1878.																822,602
Same time is	1877.											0					1,452,632
Same time is	1876.																304,411
Same time in	1875.								0.0								116,461
Same time u	1874.																105,504
Same time in	1873.																135,531
Sama tima ir	a effect																-33.53

quoted as follows, the market being heavy:

Bid.	Asked
U. S. 6's 1881 registered	1013
U. S. 6's 1881 coupon 10136	101
U. S. 5's 1881 registered	1003
U. S. 5'8 1881 coupon1005/	1003
U. S. 41/4 's 180x registered	222
U. S. 41/2's 1891 coupon 112	1125
U. S. 4'8 1907 registered11234	1125
U. S. 4's 1907 coupon	1125
The following were the closing que of active stocks:	otations
Bid.	Asked.
American District Telegraph 601/4	6136
Atlantic and Pacific Telegraph 461/4	46%
Alton and Terre Haute	0.087

of active stocks:	
Bid	. Asked.
American District Telegraph 605	6 611/4
Atlantic and Pacific Telegraph 465	46%
Alton and Terre Haute 50	51%
£ 1 UL	
American Union Telegraph 81	8136
Arizona 41/2	5
Bur., Cedar Rapids & North 77	78
Burlington and Quincy 169%	16034
anada Southern 83	83%
. C. and I. C	264
lev, Col., C. and Indiana 863	6 87
hicago and Alton 148	84854

120%	121	353, " Chain, No. 8130, change list, 3, \$2,50
. 104%	104%	lines it is No 0 shower line 0
963/4	97	351, Bolts, Square Cased, No. 8000
128	130	350½, " Nos. 8204, 8205
118	119%	
. 70	7034	358¼, " Nos. 8115, 8116
- 59	60	349, " Brass, r to 37 and 210
. 523/4	53	347. 201, 202, 203, 204, 205
. 483%	483/2	348. " 206. 207. 200
. 6	7	352, " " Chain
. 27	28	354. " and Iron Mortise
. 53	52 3/4	1354. Crosby's, All numbers
. 105	1051/4	354 4 11 10, and 17
. 59%	60	Japanned Chain, No. 220
. 57	641/2	350, " Bronze Barret, change list, 3, \$7, 35
. 4634	47	350, " " " 4. \$8.00
	24	
. 52	57	1 may 11 11 11 11 11 11 11 11 11
. 2336	241/2	351, 4 4 57.35
.1275/8	12734	351, 351, 324, Catches, Cupboard, No. 20 to 29
. 8616	87	324. Catches, Cupboard, No. 20 to 20
. 6	534	325. " No o to 18 and 125 4cd
. 76	77	326%, " Nos. 8002 to 8016
.119	1103/	334, Handles, Store Door, Nos. 8001, 8002
122	1221/2	254, "Store Door, Bronze
.117	1171/8	254, " change lists,.
413/8	413/4	22
113/4	32	
7%	736	\$20.00 2.80 2.80 3.30 3.80 3.80 4 151, Knobs, Shutter, No. 8052, list 756. 318½, 319, Lifts, Sash, Nos. 8070 to 8077. 320, Nos. 8011, 8012
. 23	24	23814 220 Lifty South Non 2 to 2
1261/6	1261/	310/2, 319, LIII 15, ISBSM, NON, 8070 19 8077
138	139	319, " No. 8100500
915/8	917/8	319, No. 8100
1465%	14674	and Pulle Drawer Nos and to see
	74	331, Pulls, Drawer, Nos. 500 to 522 331, 332, 332½, Pulls, Drawer, Kahala all
28	29	222 Handles Drawer No 102 &c
361/2	37	333, Handles, Drawer, No. 4492, &c
6534	66	27: Rings Brass and Iron Flush
127	128	364, Plates, Letter Box, No. 8003; list, \$2.85
42	423/8	364. " " No. 8005; list. \$0.55
103%	105	340, Hooks, School House
473/2	48	340, " Clothes Line
105	10534	446. Pulleys, Brass Screw
331/2	341/2	346, Pulleys, Brass Screw. Change list on No. 370, \$1.75
30%	3036	
160%	161	244. " " NO 272 2 50
4136	4236	344, No. 371, 225. No. 372, 2.50
52	521/8	222. BP888 404
	35%	323, " on Plates
1436	15%	323, " on Plates
56	57%	
3636	38	No. 7. 2 x 2 \$9.00 No. 8½, 2½ x 2½\$15.
64	0416	No. 8, 2½ x 2½ 13.50 No. 6, 13 x 2½ 7. No. 8½, 2 x 5 13.50
135	135%	
	4634	316%, Fasts, Sash, Nos. 8000 to 800340&
	66%	316, 316%, Fasts, Sash, Nos. 8007 to 8010
95	9634	317, Fasts, Sash, Nos. 50, 150, change list to \$10.50.
22478	115 -	313, Bars, Shutter, No. 11, change list to \$3.50
124	126	313, " 30, " 300
53%	5372	313, " 3.15
116	116%	313, 340%, Hooks, Chandelier, Nos. 117, 118
48		340%, " 8027 to 8048
8736	8734	
114	334%	319, Lifts, Sash, No. 75, change list to \$2.70
		319, 44 44 45 77, 44 2.00
		110, 77, 2.00,
		316, Fasts, " Nos. 20 to 13640d
very a	active	Sargent & Co. have made the following
7731		bargent of the nave made the followin

catur & Evansville

The mining exchanges were o-day and the transactions large. The following were the closing quotations:

Amie	46	
American Flag	23	
Bell Isle	60	
Bechtel	78	
Bonanza C	31	
Buckeye	24	
Bull Dom	3.80	3
	2.15	ś
Boulder	55	
Calaveras	20	
Cale. B. H	60 .	
	1.25	r
Climax	50	
	1.00	r
Consolidated Pacific	80 1	
Chrysolite		í
Cherokee		ì
	1.25	
Dahlonega	9	١
	1.15 1	
Eureka C		
Findley	24	
	.00 .	
Great Eastern	21	
Gold Placer		
	44 2.50 2	
Goodshaw	a.50 2 62	
Granville		
	5,00	
Hukill		
	28	8
Lacrosse		
Leadville	53	e
La Piata		ē
Lucerne	13	
L. Chief		
	1.99 5	
	3.00 .	
	1.50 1	
Navajo		
N. Y. & C	1	
North Stan	40 .	,
Red Eleph	35	
Rappah'k	14	
	3.00 3	į
South Hite	40	
	4.60 4	
	1,20	l
	3.50 3	į
Tioga	68	
Tuscarora	40	
Unadilla	15	
Willshire	1.30 8	

### GENERAL HARDWARE.

The difficulties attending transportation, due to the accumulation of ice and snow in our streets and rivers, prove a serious obstruction to business. The demand, however is generally reported fair, and with milder weather a large business is apticipated.

The Lock manufacturers held a meeting at New Haven, Conn., to-day, but no changes in lists or discounts were made.

The manufacturers of Augers and Bits and Chisels and Drawing Knives held their quote makers' prices nominally : usual monthly meeting to-day, at which existing prices and terms were confirmed. No decisive action by the Clothes Wringer

already noted. The demand for Nails is generally regarded as fair for the season, although no large transactions are announced. The tone of the market is strong, and we con-Government bonds at the close were thue to quote rod. to 6od. \$2.90 @ \$3, net,

according to size of order. At a meeting of the Scythe Manufactur ers, held at the United States Hotel in Boston, January 25th, 1881, the following resolution was voted and signed unanimously:

Resolved that we here and now renew our allegiance to the articles of agreement of the United Scythe Manufacturers' Association, and upon our sacred honor agree to maintain the prices and conditions established at the annual meeting at Fabyan's last June.

Russell & Erwin Mfg. Co. have made the following changes in discounts in goods of their manufacture, under date of February

atalogue	- Discount
page.	per cent.
5, Butts, No. 8015	60
5, 356, Bolts, Brass Flush, Nos. 100 8, Turns, Cupboard, Nos. 414 to 420	10 110 50 67 /2
8, Turns, Cupboard, Nos. 414 to 420	55
c. Catches, " Nos. 400 to 410	
o, "Screen Door, Nos. 8502,	8503600010
O. NO. 8501	60d
3, Handles, Chest. Nos. 11, 12, 13	50
3, Bars, Shutter, Nos. 8030, 8031	
2. Springs, Window	45

	the Charles No. 2	13
7	2 353, Chain, No. 8130, change list, 3, \$2.50	63
	8 353, No. 8130, change list, 4, \$2.654	15
	351, Bolts, Square Cased, No. 8000	10
	353, Chain, No. 8130, change list, 3, \$2.50 No. 8130, change list, 4, \$2.65 351, Bolts, Square Cased, No. 8000 No. 8304, 8205	12
	/ 350/21 11 Physic No. 0 - 1108, 0204, 0205500	5
23	358. Flush, No. 8106	5
Ž	I I 350%. NOS HITE HITE	5
	349, " Brass, 1 to 37 and 210	0
	347, " 201, 202, 203, 204, 205,4061	~
2.	347, 4 201, 202, 203, 204, 205	O
3/2	348, 4 206, 207, 209	0
	352, "Chain	0
	352, "Chain	0
1/	354. " Crosby's, all numbers	
O	and the time and an	r
74	33474+ 10, 8110 17	Э
	352/2, " Japanned Chain, No. 230	0
1/2	1 250. Bronze Barret, change list a Salar	2
	350, 41 44 44 45 45 47 37 50 - 40 350, 41 44 45 45 45 45 45 45 45 45 45 45 45 45	-
	350 11 11 11 11 11 11 11	,
	350, 5, \$9.7540	,
	351, 3, \$6.5040	3
6		3
V	351, " " 5, \$8.75 40	
*	224 Catches Cuphoned No se to se	
1	324, Catches, Cupboard, No. 20 to 2940&10	7
4	325, No. o to 18 and 125 40 & 10	j
	32074. NOS, 8002 to 8010	5
4	334, Handles, Store Door, Nos. 8001, 800260	,
6	254, "Store Door, Bronze	
	854, Store Door, Bronze	P
3	254, change lists,4c	
4	Nos 708 709 1709 2709 710 1710 2710 \$20.00 2.80 2.80 3.30 3.80 3.80 4.30	,
	\$20.00 2.80 2.80 3.30 3.80 3.80 4.30	
4	151, Knobs, Shutter, No. 8062, list 75¢	1
	151, KHOOS, SHULLET, 140, 8082, HSL 750	4
1	318%, 319, LITTS, SASE, NOS. 8070 to 807745	
ç	318½, 319, Lifts, Sash, Nos. 8070 to 8077. 45	
	319, " " No. 8160	, 1
á	332, Irons, Sash, Cord 50	П
2	ast Pulla Deawon Nos as to see	. 1
•	331, 1 uns, Drawet, 103, 500 to 52200	- 1
	331, Pulls, Drawer, Nos. 500 to 522	- 1
	333, Handies, Drawer, No. 4402, &c. 45 370, Trimmings, Shutter 45 371, Rings, Brass and Iron Flush. 45&5 364, Plates, Letter Box, No. 8003, list, \$2.85, 40 364, No. 8005, list, \$0.50, 40 340, Hooks, School House. 45	- 1
	370, Trimmings, Shutter45	. 1
	271 Rings Brass and Iron Flush 4: &c	. 1
	of Plates Letter Pay No. 2 1 list 2 - 2	. 1
á	304, Fintes, Level Dox, No. 0003 ; HSt, \$2.0540	- 1
8	304. NO. 8005 ; IISt. \$0.5540	- 1
	340, Hooks, School House 45	-1
	340, Hooks, School House 45 340, Clothes Line 50	П
(	u6 Pulleys Brass Scrow	П
2	346, Pulleys, Brass Screw	П
	344, Change list on No. 370, \$1.7540	- 1
t	344, No. 371, 2 2540	1
	344. "No. 371, 225	J
	222. Buttons, Japanned all	1
-	nea it Prace	1
	3431 (1 am Dietar	1
,	323, " on Plates	1
	309, Butts, Brz. Shutter Butts and Flaps, chg. list.	I
1	No	1
	No. 7. 2 x 2 \$9.00 No. 81/2, 21/4 x 21/2\$15.00	1
	No. 8, 21/2 X 21/2. 13.50 No. 6, 13/8 X 21/4 7.00	1
	No. 81/2, 2 X 5 13 50	1
	CV Banto Cash Van C to C.	I
	316¼, Fasts, Sash, Nos. 8000 to 8003 40&10 316, 316¼, Fasts, Sash, Nos. 8007 to 8010 50	1
	310, 310%, Fasts, Sash, Nos. 8007 to 801050	ı
	317, Fasts, Sash, Nos. 50, 150, change list to \$10.50.40	1
	313, Bars, Shutter, No. 11, change list to \$3.5040	1
1		1
d	313, " 30, " 30040	1
ı	313, 31540 340 %, Hooks, Chandelier, Nos. 117, 118	1
U	340%, Hooks, Chandelier, Nos. 117, 11870	1
J	340%. " Ro27 to Ro48 75	1
I	340%, " " " 9046 to 904840	1
	Yafte Cook No change list to 6	1
- 1	319, Lifts, Sash, No. 75, change list to \$2.7040	ĺ
ı	319, 44 44 177, 46 14 2.0040	1
ı		1
1	316, Fasts, " Nos. 20 to 13640&5	1
1	310, 2 4010, 20 40 230	I
1	Sargent & Co. have made the following	1
1	0	1
1	changes in the list prices of their Reversible	1
1	The same and beautiful to the property of the same of of the	a.

Shutter Bars, on page 347 of their 1880 catalogue. This list is subject to discount 66% per cent, and their usual discount for cash:

William McNiece, Philadelphia, illustrates in an advertisement on the 29th page, Patent Screw Socket Edging Knives, Garden Hoes, and Paper Hangers' Scrapers which possess the advantage of occupying but little space, as they can be quickly screwed on an ordinary broom or hoe handle, and as easily detached.

Bissell & Welles, auctioneers, announce a large trade sale of Hardware, Housefurnishing goods, Table and Pocket Cutlery, &c., the dealings during the week just coming to commencing on Tuesday, February 15th and a close should be moderate; sales have indeed not exceeded about 200 tons Straits. ommence at 10 o'clock each day. In their advertisement, on the opposite page, further particulars regarding the sale will be found.

E. Ketcham & Co. show, in their advertisement on the 12th page, an illustration of the "Champion" Metallic Flour Sieves for flour or corn meal, which they have recently put on the market, and to which we invite the attention of the trade.

The Simmons Hardware Company, St. Louis, Mo., issued late last year one of the most comprehensive catalogues of Hardware, Cutlery, &c., that has yet come to our notice. In an advertisement, which appears among "Special Notices" they offer to forward the book by mail on receipt of \$15.

co-partnership on the 1st inst., under the style of Brower & Leeds, for the transaction of business as Hardware manufacturers' gents. Their place of business is at No. 81 Murray street.

### BRITISH IRON MARKET.

existing prices and terms were confirmed. No decisive action by the Clothes Wringer	Glengarnock Eglinton	58/
manufacturers has yet been announced, and prices continue in the disturbed condition	A decline of 6d in Glengarnock and ton.	Eglin

Manufactured Iron.—There is but little demand, ane prices are nominal. Best Staffordshire bars are quoted £7 @ £7. 19/.

Steel Rails-There is a marked improvement in the demand, and a fairly large business has been done. Prices are firmer, with an upward tendency, ordinary sections being quoted £6. 15/@ £7.

Iron Rails.—Prices are firmer under an

improved inquiry, although transactions have been light. Prices tend upward, the quotation for Welsh now being £5. 15/ @ £6, as compared with £5 @ £5. 10/ last week.

Old Rails,-Quotations for Old Ts have been reduced to £4, and there is now a brisk demand, with a disposition to advance Scrap.-The offerings have been light,

with fair sales. Prices are advancing. Wrought is quoted £4. 2/6-an advance of 12/6 over last week's prices.

### IRON.

American Pig.-The business transacted is expected. The tone of the market con- 1514¢.

350, Bolts, Barrel, No 8000, Unground. ......50&5 tinues strong, and we do not hear of any pressure to sell. Prime Lehigh brands are quoted \$25 @ \$26 for Foundry No. 1, \$22 @ \$23 for No. 2 X, and \$20 @ \$21 for Gray

Scotch Pig.-The transactions in Scotch Iron since our last writing have been light. Prices are unchanged. We quote: Eglinton, \$22 @ \$22.50; Carnbroe, \$22.50 @ \$23; Coltness, \$24.50 @ \$25; Glengarnock and Gartsherrie, \$23 50 @ \$24.

Rails.-The inquiry for Steel Rails continues active, but we have not heard of any new contracts being placed. We quote, nominally: Iron Rails, \$43 @ \$50; and Steel, at mill, \$59 @ \$62.50.

Old Rails .- We have not heard of any transactions in Old Rails worthy of mention during the week. The impossibility of moving heavy goods in the present condition of our streets accounts for the quietness prevailing in the Iron trade. The tone of the market, however, is firm, and \$29 @ \$31 for Ts and D H were the quotations at the close of business to-day.

Scrap.—There seems to be considerable inquiry for No. 1 Wrought Scrap, although, for the reasons mentioned above, the transactions have been light. We quote selected No. 1 Wrought, from yard, \$30 @ \$31.

### METALS.

Copper.—Since our last week's report the market has been inactive and quiet at nominally 19%\$\$\psi\$ @ 19\%\$\$ for Lake Superior, and 18\psi\$ \psi\$ 0.79\$ for Baltimore. There is nothing new from London per cable, Chili Bars there still being quoted £62. 10/, and Best Selected, £68. "London, January 15. This market has not undergone much change, but as buyers have shown less disposition to make purchases, prices have assumed a somewhat easier tendency. Not-withstanding the reduction which was made in the visible stock on the 1st inst., the mar-ket is still in too heavy a condition to form much inducement to buyers to renew buying to any material extent, so, to insure the maintenance of the market, it seems necessary that there should be a continuance of curtailed supplies from all sources. The charters for the first half of the month from Chili are announced as only 1500 tous, and although this has given some slight tone to the marthis has given some slight tone to the market, yet buyers have not displayed much eagerness to recommence operating, and transactions, both for speculative and legitimate account, have been rather limited." Manufactures remain as under: Bottoms, 31¢; Braziers, according to size, 28¢ @ 34¢; Circles, 31¢ @ 34¢; Segment Sheets, 31¢; Fire-box Sheets, 28¢; Sheathing, 26¢; and Bolt Copper, 28¢.

Tin—Since the large husiness done re-

Tin.—Since the large business done, re-orted by us last week, it is but natural that London cables £91, Straits Tin, and Singapore, \$28.50 per picul. The jobbing demand here is fair for the season, and expected to increase during the month. Arrivals in increase during the month. Arrivals in January here and at Boston have been 680 tons, while the consumption is estimated to have been 900 tons, leaving a stock in importers' and jobbers' hands valued at 2900 tons. Shipments from the Straits settlements to the United States during all the month of January have been only 250 tons.
Statistically Tin is thus in good position on this side, for the shipments this way are light, and the lowest estimate we can put ware, Cutlery, &c., that has yet come to urrent consumption is 750 tons. We urrentice. In an advertisement, which appears among "Special Notices" they offer to forward the book by mail on receipt of \$15.

John Brower and Robert Leeds formed a lished at the end of last month being rather the secretarity of the secret less favorable may, perhaps, to some extent have damped the great eagerness which before prevailed to enter into contracts, and until greater certainty exists with regard to the future a feeling of hesitation may not unlikely continue to characterize the market. The advance yesterday in the bank rate may, perhaps, have discouraged operators from making fresh purchases, as finance cant be secured upon such favorable te [Special Report by Cable to The Iron Age.] Tin Plates .- Our market has been firm, but \$4.871/2 @ \$5.

> Lead. - A steady, moderate jobbing trade is transacted at 5¢, which is the closing figure for Common Domestic; large dealings eem to have ceased for the moment. stated that it costs at present about \$5.35 to lay down Lead here from Europe; such Lead is held here at present at \$5.50. Refined Domestic is inactive, but firm at 5 \(\psi\)\epsilon\_c. "London, January 15.—There is little or no change to be reported either in the demand or prices, the former continuing somewhat or prices, the former continuing somewhat slack, and the latter steady. It is reported that the markets on the Continent are rather animated, and that a sharp rise in prices does not appear improbable." Manufactures are quoted as follows: Sheet Lead, 7¢: Lead Pipe, 6½¢; Tin-lined ditto, 15¢, and Block Tin Pipe, 40¢.

Spelter and Zinc .- There is a moderate Speller and Zinc.—There is a moderate amount of activity here at 5½\$ for Common Domestic, at which figure it remains very firm. Silesian is held at 5½\$ @ 5¼\$, according to brand, without anything transpiring therein. Sheet Zinc is selling at 7\$, "London, January 15.—This market has for the most part continued strong, but at the close prices for Silesian are a shade easier. The improved prices of the last week or two has been the means of causing an advance has been the means of causing an advance of fully 10/ per ton in the price of gal-vanized iron."

American Pig.—The business transacted during the week was light, and until milder weather sets in, no large movement in Iron lett" is 147%, and for "Cookson" 15% @

Porto Rico.

Ptlm., gals. 16,350 2,043

French West Indies. 130 Ptlm., gals...5000 700

Trieste.

Organ 1
Hdw. cs. 12
Cge. mtl. pgs 62
Fdm. gals 7500
Saws, cs. 1
Mach'y, cs. 61
Plano 1
Glassw're cs. 1

Mach'y, cs... 61 1,115 Piano ... 1 160 Glassw're, cs. 34 186

in Africa.

Ptim. gals 22,002 4,045
Mu insts, cs. 12 595
Grindstns., cs. 1 12
Ag imp. pkgs 37 157
Mf, iron, pkgs 33 270
Bidg, mth.pgs 26 2,500
Wag mth.pgs 8 1,330
Hdw., cs. 1 12
Clocks, bxs. 2 130
Mf wood bkgs 9 152

Beyrout.

British Possessions Ag. imp., pkgs

Ftlm., gals. 161,020 18,000 | Pumps, pkgs. 2

24			
1	XPO	RTS	
Of Hardware,	lron,	Machinery, Me	tals,
		of New York, for	r the
Week ending F Hamburg.	eoru	Contrat to	ion.
Onan	Val.	Quan.	Val.
Mf. wood, pkgs 26	1,595 485 876	Mf. iron, pkgs \$90 Nails, kegs 20	234 136
Mf. wood, page 20 Mf. iron, pkgs 11 Ptg. matl, pgs 30 Belting, cs 1 Lub. oil, bbls. 120 Sew. ma., cs 323 Clocks, bxs 22	1,510	Nails, kegs 20 Hdw., cs 18 Ptlm., gals 1296 Tel.mtl., pkgs 36 Shot. lbs 509	180
Lub. oil, bbls. 120	7,000	Shot, lbs 500 L'mp g'ds, cs. r Y. met. sh., cs r	33 76
Clocks, bxs 22	708		
Ag. imp., pkgs 17 Machinery, cs 32 Bremen.	s,870	United States of lombia.	
Tub oil bbls. so	548	Hdw., cs	1,077
Mf. iron, page 3	195		
Organ I	75 300 423	Wire, spools. 2 Shot, kegs 4 Steel, cs 5 Glassw'e, pgs. 10	44
Hdw., cs 17 Ag. imp., pkgs 29 Clocks, cs 5	2,115	Glassw'e, pgs. 10 Sew. mach., cs 7	197 138
Wheels 24 Mach'y, cs 2	7-	Africa.	230
Mf. wood,pkgs 103 Iron rolls, cs. 2	350	Ptlm., gals.145,349 Sew. ma., cs., 6	16, 104
Belting, bale. 1 Danish West In	300 dies.	Sew. ma., cs 6 Hdw., cs 12 Clocks, cs 3 Mach'y, cs 6	223 58
Wheels 40	135	Mach V. cs 6	212 57
Glassware, cs. 5 Ptlm., gals 500 Nails, kegs 3	67	China.	
Fire-brick 5000	125	Rifles & b., cs. 55 Cartridges, cs 500	9,250
Saddlery, cs 1 Iron, bdls 62 Grindstones 4	150	British Austre	
Tinware, cs i	20	Ptlm., gals., 36,380 Mf. wood, pkgs 169	704
Hdw cg 2	44	Hdw., cs 951 Sew. ma., cs 252 Mach'y, cs 7	7,590
Ptlm., gals 880 Clocks, cs 2	111 137 88	Mach'y, cs 7 Tacks, cs 27 Glassw'e, pgs. 14 Organs 44	740 545 403
Sew. ma., cs e Cart	43	Organs 44 Lamp gds,pgs 23	
Ptg. ma., pgs. 3  Dutch Guian	410	Belting, cs s Wringers, cs s	65
Ptlm., galssoco		Crucibles, hhd 8	3,329
Brazil.		Gas fixt., cs 4 Carriages 34	3,985
Ptlm., gals60,483 Ir goods, cs 1 Nails, kegs 100	8,240 3 300	Axles, cs 4 Clocks, bxs 130 Cge. gds., pgs 91	1,891 2,576
Cutlery, cs 5	105	Fumps 18	1,100
Amsterdam		Mangles, cs., 2	735
Ptlm., gals.260,300 Antererp.	31,000	Mf. iron, pkgs 84	780
Ptlm., gals.637,719	53,913	British Hendu	
	1,002	Hdw., cs 36 Shot, kegs 10 Wire, spools. 116	575
Ag. mp., page 9	240	Shot, kegs 10 Wire, spools 116 I. r. goods, cs. 1	
Rotterdam.	595	Cutlery, os 6	156
Carriages 3	1,830	Ptlm., gals1000 Glassware, cs. 3 Mf. iron., pkgs 229 Cartridges, cs. 2	195 39 783
W. mill, pkgs. 7 Pumps, pkgs. 6 Mf. iron. pkgs. 32 Clocks, bxs 14	667	Mf. iron,, pkgs 239 Cartridges, cs 2	783 43
Ag. imp., pkgs 4	335 *75	Rifles, cs 1	91
Ag. imp., pkgs 4 Pitdwe, pkgs 5 Lub. oil, bbis 100 Piano	1,044 700	Sew. ma., cs 2	494 84
Bristol.		Pasages. Ptlm., gala.165,000	87,800
Ptim., gals. 278,000 Hull.	27,800	Ouba.	
Hdw., cs 11	236	Ptim., gals.219,041 Sew. ma., cs. 5	99
Lub. oil, bbls. 7 Ag.imp., pkgs 8	600	Mach'y, pkgs. 57 Boilers 2 Mf. iron, pkgs. 195	7,199 1,145 2,534
Gibraltar. Ptlm., gals. 112,880		Ag. imp., pkgs 111 Hdw., cs 186	1,985
Liverpool.	12,300	Nails, kegs 124	363
Hdw., cs 58 Met. goods, cs. 2	2.743 360	Roofing, pkgs 33 Grindstones 116	349 269
Mf iron nigra of	300 4-480	Photo, gds., cs 5	400 180 400
Ag. imp., pkgs 106 Clocks, pkgs. 137 Mach'y, cs 84	6,980	Coal, tons 923 Mach. oil , cs. 25	4,110
Wtch. mtl., cs 1	2,390	Pumps, pkgs. 13	535
Clocks, box	428	RR.mtl.,pkgs.25	9,380
Pho. mtl., pgs 11 Lub. oil, bbls. 332	30 416 3,670	Iron safes 2	105
Brass gds., cs. 33 Mf.wood,pkgs 44	2,400	Lampgds, pgs 12 Wire, spools. 30 Belting, cs 1	165
Sew. ma., cs 7 Pitdware, cs 1	332	Tr. nps., bdls. 3	113
Cutiery, cs 9	1,800	Mentee. Clocks, bxs 46	1,223
Mf.wood,pkgs 3 Belfast.	55	Arms, cs 3 Belting, cs 3	258 258
Ag. imp., pkgs 10	662 446	Hdw., cs 353	7,438
Mf.wood,pkgs 55 Mach'y, cs 5 Mf.iron, pkgs. 35	225	S. m. oil, cs 8	374 86
Cork.		Nails, kegs 98 Ag. imp., pkgs 35 Tin plate, bxs 17 Railroad cars. 2	914 1,201 101
Ptlm., gals.24.703	5,000	Carts 40	2,049 1,560
London. Organs 16	3.570	RR. mtl.,pkgs oo	134
Mach'y, pkgs. 23 Mf. iron, pkgs 50 Mf. wood, pkgs 120	5,920	Copper, pkgs. 2 Wire, spools 50	127 380 625 672 147 1,621
Mf. iron, pkgs 50 Mf. wood, pkgs 129	544 1,075	Wire, spools. 50 Eng. insts., cs 5 Coal, tons 168 Telp. mtl., cs. 2	672
Brass ords os 6	3,671	Mf. Wood, DKgs 200	1,621
Tubing, case. r Clocks, bxs 114 Sew. ma cs 23	2,389	Cartridges, os 7	183 2,170 1,152
Sew. ma., cs 23 Ptlm., gals.70,482 Tel. mtis., cs. 1	632	Tacks, cs 10	1,152 289 2,981
Glasgow.		Mf. iron, pkgs 113 Nails, pkgs 4 Revolvers, cs. 3	2,981 45 2,423
Mf.wood,pkgs 45 Wheels & axis 100	975 914	Shot, kegs 3	1,771
Lub. oil, bbls. 125 Ag. imp., pkgs 13	014 1,750 630	Pumps 4 Ptim. gals48,500	6,400
Mf. iron, pkgs 76	558	Wheels, prs. 4 Iron, pkgs 7 Car mtl., pgs. 509	78
Mach'y, cs 16	1,640	Tranquan	3,079
Clocks, bxs s47	3,279	Pitdware, cs. 7	429
Mf. iron, pkge z	24	Mf.wood,pkgs 5	307
Leith.		Hdw., cs 34 Ag., imp., pkgs 173	502 4-555
Ptlm., gals. 350,000 Canada,	4,800	Dent. mtl.,pgs 3 Wire goods, cs 30	300 300
Guns, case x	200	Ptlm., gals10,000 Lamps, pkgs. 4	1,225
British North An		Sew. ma., cs 30	600
	2,040	Argentine Repu Ag. imp., pkgs 230	3,910
Mf. iron, pkgs 3	50	Hdw., cs 48	434

			T
ORTS	1	Fenesuela.	British West Indies.
Machinery, Meta	ila.	Mf.wood,pkgs 49 470 Glassw'e, pgs. 9 270	Carriages 4 732 Mf. iron, pkgs 278 457 Hdw., pkgs 36 605
of New York, for	- 1	Ptlm., gals 12,283 1,767 Mach'y, pkgs. 14: 5 24,554	Hdw., pkgs 36 605 Y metal, cs 3 181
ary 1, 1881:		MIL HOU, DEGE 159 1,272	Mf.wood,pkgs 16 73
Central America	a.	Ouicksil., fiks. 34 1,200	Ptlm., gais. 36,911 4,371
Quan.	Val.	Nails, kegs 22 120	Glassw'e, pgs. 30 293
Nails, kegs 20	234 136	R.R. iron, pcs. 500 120	Nails, Kegs 125 704
Hdw., cs 18	417	Iron, pkgs 15 235 Sew. ma., 08 37 1,200	Piano mtl., cs. I 120
Ptlm., gals1296 Tel. mtl., pkgs 36 Shot, lbs 500	100	Shot, bxs 3 100 Shot, bxs so 130	Clocks, cs 3 59
L'mp g'ds, cs. r	33 76	Cart 1 140 Wagon 1 120	Mach'y, pkgs. 3 60
Y. met. sh., cs I United States of	50	Belting, cs 10 1,000	
lombia.	00-	Boilers 2 2,000	Cutlery, cs z z50
Hdw., cs 18 1	,077	Mf. iron, pkgs acs 665	Pitdware, cs 1 00
Nails, cs z Clocks, cs z Powder, lbszz40	32 59	Sew. ma., cs. 2 99 Ptlm., gals5700 708	Crucibles, hhd 23 770
Wire, spools. 2	205 44	FIGW., CB.,,,,, 7 LAY	Machy., pkgs. 07 075
Wire, spools. 2 Shot, kegs 4 Steel, cs 5	103	Ag. imp., pkge 1 118 Naples.	Philo. inst., cs 1 100
Glassw'e, pgs. 10 Sew. mach., cs 7	197		Operto.
Africa.	230	Pens, cs 1 25	Stoves, pkgs. 20 220
Ptlm., gals.145,349 16	104	Inh oil bhis to 272	Palermo.
Sew. ma., cs 6 Hdw., cs 12	75	Hdw., cs 19 356	Mach'y, cs 9 2,000
Clocks, cs 3	58		o Dane
Mach'y, cs 6 Cutlery, cs 1	57		ORTS
China.			Steel and Metals into
Rifles & b., cs. 55 ro Cartridges, cs 500 9	,000		rk, for the Week ending
British Australi		February 1, 1881	å
	,919	Hardware.	Sheet Iron has
Mf.wood.pkgs 169	704	Brodsky, F. V.	Sheet iron, bxs., 57 Sheet iron, bdls., 17
Hdw., cs 951 22 Sew. ma., cs 252 7	,590	Ironware, cks., 10 Boker, H. & Co.,	Henderson, Bros. Pig, tons, 200 Mason & Co., J. W.
Mach'y, cs 7 Tacks, cs 27	740 545	Cases, 15	Wire rope, reel, r
Tacks, cs 27 Glassw'e, pgs, 14 Organs 44 2	803	Casks, 5 Barbour, Bros.	Wire rope, coils, 4 Nevada Bank of San
Lamp gds.pgs 23 Belting, cs 2	719	Machy., cs., 9 Bank of Montreal,	Francisco,
Wringers, cs 5	65	Emery stone, tons,	Prosser & Sons, Thos.
Crucibles, hhd 8	320	Bloomfield & Co., J. C.	Tire forgings, 14 Tillotson, L. G.
Gas fixt., cs 4 Carriages 34 3	985	Machy., cs., 3 Degraw, Aymar & Co. Chain, lengths, 7	Galvanized wire, lots, 468
Axles, cs 4	131	Dolge, A.	Williamson & Co., J.
Cge. gds., pgs 91 2	,576	Ironware, cs., 10 Emil de Planque,	Order,
Badlery, cs 7	322	Cases, 15 Field A. & Co.	Spiegel, tons, 250 Ore, tons, 1305 Pig, tons, 1500
Ag. imp., pkgs 14 Mangles, cs 2	735 55	Chain, cask, z Hoss, cks., z	Wire rods, pags., 244
Nails, bxs 13 Mf. iron, pkgs 84	780	Hdw., cs., 13 Wads, cs., 7	Spiegel, lot Wire rods, bdls.,
Locomotives. 2 7	,000	Sickles, csk., 1	1026 Wire, bdls., 1554
British Hondure		Sickles, csk., 1 Howard, Bros. & Read, Mdse., pkgs., 16 Lowenstein & Kayser,	Water, 50000, 1334
Hdw., cs 36 Shot, kegs 10	575 65	Machy., cs., 5	Steel.
Wire, spools, . 116 1	267	Machy., cs., 5 Mount, J. T. Mdse., pkgs., 4	Abbott, Jere, & Co. Cases, 61
I. r. goods, cs. 1 Cutlery, cs 6 Nails, kegs 65	156	Mdse., pkgs., 4 Moulson, J. Casks, 7	Brown, Shipley & Co. Bessemer sheet
Ptun., gais1000	135	McCoy & Saunders,	blooms, 306
Mf. iron,, pkgs 229	783	Sacks, so Case, s	Blooms, 488 Blake Bros. & Co.
Sadlery, cs a	43 994	McKinless, A. Casks, 3	Bundles, 155 Brown, Wm.
Rifles, cs 1 Firearms, cs. 3	91 404	Pin., Forwood & Co. Cases, 3	Bundles, 107 Merchants' Dis. Co.
Sew. ma., cs 2	84	Schoverling, Daly & Gales,	Bundles, 158 Prosser & Sons, Thos.
Pasages.		Cases, 9	Bands, 77 Temple & Lockwood,
Ptlm., gals. 165,000 17	7, 100	Thompson & Co., J. Machy, cs., 4	Bundles, 153 Cast steel tires, 74
Ouba.	. 99	Machy, cs., 4 Weights, 44 Taylor, Thomas,	Order,
Ptlm., gals.219,041 at Sew. ma., cs. 5	99	Williams & Guion,	blooms, 366
Boilers 2 1	7,199	Ag. imps., case, z Wiebusch & Hilger	Wire pkgs., 885 Rods, bdls., 1160
Mf. iron, pkgs. 195 2 Ag. imp., pkgs 111	1,534	Hdw. Co. Cutlery & hardware,	Cases, 37
	363	pkgs., 59 Vom Cleff & Co.	
Nails, kegs 124 Roofing, pkgs 33	551	Ironware, cs., 17	Motals.
Grindstones 116	349 269	Order, Guns, cs., 5	Agostine, J.
Gas fixture, cs s Photo. gds., cs 5	180	Ironware, cask, z Cases, zz	Old copper, cs., 2 Coddington & Co., T. B.
Coal, tons 90	400	Cases 2	Lamarche, H.
	58	Iron.	Rolled zinc, cks., 105 Moses & Co., J. H.
Mf. wood, pkgs 21	535 562	Brown Bros. & Co.	
Gl'sware, pgs. 25 RR.mtl.,pkgs.2192 9	,380	Swedish nail rods,	Tin plates, cs., 7
Iron safes 2	105	Swedish bars, 685	Noel, Aug. Tin plates, cs., 7 Phelps, Dodge & Co. Tin plates, bxs., 1442 Black tag., bxs., 25
Wire, spools. 30	165	Baring, Bros. & Co. Pig, tons, 290	Order,
Belting, cs 1 Tr. hps., bdls. 3	113	Coddington, T. B. Sheet iron, lot	Tin plates, bxs.,
Mewico.	des		+
Clocks, bxs 46 z	,223	OLD METALS, P.	APER STOCK, &c.
Arms, cs 3 Belting, cs 3	260 258	The purchasing pr	ices offered by dealers
Glassware, es. 59	650	are as follows:	
Lunp.gus.,pgs 23	374 86	Copper Bottoms	\$ b. \$0.16 @ \$0.17
Nails, kegs 98	914	Yellow Metal	(0) (0)
Ag. imp., pkgs 35 1,	101	Brass, heavy Brass, light	" .09 @ .09%
Carts 40 I.	049 560	Composition, heavy Lead, heavy	"
Fuse, bbls 4	134	Tea Lead	" .03¾ @

33	Tr. hps., bdls.	3 4	Sheet from, lot   18,910
90	Mewico		
00	Clocks, bxs	46 1,22	OLD METALS, PAPER STOCK, &c.
55	Arms, cs	3 26	
	Belting, cs	3 25	
		50 65	
52	Hdw., cs 3	53 7.43	
6		23 37	
6	8. m. oil, cs	8 8	Copper southern in it is it is
6			Tellow Metal
		P - P -	Drass, neavy
		35 1,20	ecgo, all the contract to the
	Railroad cars.	17 10	COMPOSIMON, HORYY ,1479 KB ,1479
10	C14-	3 2,040	Lead, heavy " .04 @
	Carts.	40 1,560	Tea Lead " .03% @
	Fuse, bbls	4 134	Zinc " .031/2 @ .035/2
0	RR. mtl.,pkgs	99 3,000	Pewter, No. 1
0	Copper, pkgs.	2 127	Pewter No a
0		50 380	Wrought Iron W ton 22 00 @ 22 00
4	Eng. insts., cs	5 629	Tight do
5	Coal, tons z	68 672	Stove Plate
2	Telp. mtl., cs.	2 147	Machinery do " 16.00 @ 17.00
0	Mf. wood, pkgs zo	o6 1,621	17.00
		70 4,771	7.00 @ 8.00
2		7 18:	
9		3 2,170	
2	I r goods, cs	7 1,152	
0		280	Canvas, Linen
0	Mf. iron, pkgs 1		White Cotton, New " 3%c. @
	Nails, pkgs		No a wall
	Revolvers, cs.		White Wo . I/a @ . I/a
5		3 2,422	
4	Chat kame	-666	Seconds " - Wa @ - Wa
0	Shot, kegs	3 55	Boft Woolens
		4 100	Mirrod Dame
0		00 6,400	
8	Wheels, prs	4 128	Guilly being 1730. 65
	Iron, pags	7 78	Kantucky Raccing
5	Car mtl., pgs. 50	3,070	Remucky Dagging 3C. (25
0	Was as as		BUOK Stock 2720, 65 2740.
9	Uruguaj	y.	Newspapers 1760 @ 1740.
	Pitdware, cs	7 420	Trace I aper and octaps 750. (b) 740.
- 1	Tinware, cs :	7 429	
- 1	ARREST SOATO, GOLA 2	307	

### COAL.

The extremely severe weather during the ast few days has caused no little trouble in the trade. At the present moment the harbor and rivers are so full of ice that it is almost impossible to make shipments. The cold weather, according to some accounts, has made no inconsiderable trouble with Ag. imp., pkgs 230 3,910 Hdw., cs...... 48 434 Mf. iron, pkgs 10 149 Tacks, cs..... 50 129 Saudpaper, cs 10 213 shipments from the mines also. The local demand is brisk, especially for the domestic sizes. Manufacturing Coals are in good demand, but the buying is still from hand to mouth. The work at the mines is going on, and the roads are sending forward a good supply. The last returns show a weekly shipment of some 500,000 tons. If anything like the same amount comes down during the present severe weather, it will have to wait at the shipping points for more favor-

The Western trade, as well as the rail trade to the East and North, is brisk. "Line

\$4.45 for Stove, with a company in the mar-

### PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., }
PHILADELPHIA, Feb. 1, 1881.

Pig Iron.—The condition of the market shows very little change from last week, and prices are remarkably steady considering the indifference of buyers. The remarks made last week in regard to the difmarks made anst week in regard to the ficulties of transportation might with propriety be repeated to-day. The streets are blockaded with a fresh fall of snow, while the remains of previous storms are heaped up and frozen almost as hard as granite. That this is a serious hindrance to business cannot be denied, and a return of open spring weather is ardently desired. The amount of iron sold is very fair considering the circumstances, and the steadiness in prices remarkable. No large lots have been prices remarkable. No large lots have been sold, however, and excepting transactions in Bessemer mentioned two weeks ago, we doubt if any sales have been made of lots exceeding 500 or 1000 tons each. The statement sent to various papers under the headment sent to various papers under the head-ing of "Special Correspondence from Phil-adelphia," that 65,000 tons of Pig Iron were sold last week by one house, and that 3000 tons Muck Bar were sold at \$39 at mill by another house, and 1000 tons Skelp at 2.45¢ is so wide of the mark, that it is not likely to be accepted even by parties at a distance. No transaction in Pig Iron involving one-tenth the amount stated (unless that in Bessemer three weeks ago) has been made here and any statement to the contrary is only calculated to mislead. The requirements of consumers are moderate, but these appear to be met chiefly by deliveries on former contracts. There is more inquiry for Foundry Irons, and we look for heavier sales during the month upon which we have just entered. Prospects at the foundries are of a most encouraging character, and a steadily increasing consumption may be expected. With more settled weather and a general resumption of business, especially at the stove works, we incline to the idea of an improving market for these grades, notwith-standing less favorable reports from abroad. Mill Irons are steady, and good brands are The outlook at held with much firmness. the moment, however, is less promising than in Foundry Iron. The demand for finished In roundry fron. The demand for mished Iron, although very large, is at irregular prices, and manufacturers elaim to be working for the most meager profits, so that prospects of higher prices for material are not very bright. On the other hand, furnacemen have had to submit to an advance in Ores, while other items of expenditure all tend in the same direction. Apart from the influence of foreign markets, we should be inclined to look for higher prices all around. The production of Pig Iron in England, however, has been increased enormously, and as prices there are \$3 to \$4 per ton higher than during the period of depression, it may be supposed that it is being turned out with a fair margin of profit to the manufacturer. It is not likely that any such increase in cost of production has been made in this country, each of the figher markets are smalled to absorb that if other markets are smalled to absorb that it is the markets are smalled to the small that the smalled t heir surplus, the American heir surplus, the American No. I foundry may be quoted at \$24.50 @ \$25.50, with sales in exceptional cases at 50¢ higher or lower than the extreme figures. New brands have to be marked down in order to get them introduced, so that, although \$25 is asked, concessions of 50¢ to \$1 per ton would be made to the best class of consumers. Standard brands are in demand for forward delivery, and \$25 can be obtained without difficulty.

A \$26 can be obtained without difficulty.

A \$26 can be obtained without difficulty.

A \$26 can be obtained without difficulty.

A \$27 can be obtained without difficulty.

A \$28 can be obtained without difficulty.

A \$28 can be obtained without difficulty.

A \$26 can be obtained without difficulty.

A \$27 can be obtained without difficulty.

A \$28 can be obtained without difficulty.

A \$29 can be obtained without difficulty.

A \$20 can be obtained without difficulty brands are in demand for forward delivery, and \$25 can be obtained without difficulty. Holders ask \$26 for anything later than March, and a good deal of business has been done at 50¢ less. It is difficult to obtain any advance for February and March, however, and anything beyond \$25 for immediate delivery is rather exceptional. No. 2 is steady and firm, and with light offerings, \$22 @ \$23 appear to be the ruling quotations. Gray Forge is steady, \$20 @ \$21.50 being is steady, \$20 @ For ordinary extreme rates both ways. For ordinary brands \$20.50 is asked, but concessions of 50¢ have been made in some cases. The best and most favorite brands command \$21.50 easily; some claim to be getting more they certainly ask more Mo White may be quoted, \$17 @ \$19. Mottled and

Charcoal Iron-Is in fair demand, but Charcoal Iron—is in fair demand, but prices are very irregular. Sales of Hotblast have been made below \$34 in some cases, although \$35 is asked. Cold-blast is quoted from \$37 to \$39, and the best brands firmly held at outside rate.

Foreign Iron.-Scotch is very quiet and sells only in a retail way, at \$22 @ \$22 50 for Eglinton and \$25 for Gartsherrie; Midof No. 3 have been made of 100 tons at \$18.25, and 200 tons at \$18.25, and 200 tons at \$18.16 to tons at \$18.25 to the prices could be obtained for a let of sac tons or more.

Bessemer Iron-Sold at a fraction over \$27 for a 5000-ton lot of Foreign. We hear of other brands of Foreign being offered at \$27, without finding buyers

Muck Bars .- The demand is very mcderate, and sales in quantity are not easily made, even at \$38, which appears to be the asual asking price.

Blooms.—There is a fair demand at unchanged prices, viz: Charcoal Blooms, \$65; Run-out Anthracite, \$55; Sunken Scrap Blooms and Northern Ore Blooms, \$45 @ \$50.

Structural Iron.—Business continues dull, although there are more inquiries, and prospects of orders at an early date are rather more encouraging. Manufacturers are rapidly finishing up old contracts, and the Manufacturers trade to the East and North, is brisk. "Line trade" is also active. Prices are not changed, and most dealers say they are getting "bang up" circular rates. The circular of the Pennsylvania Coal Co. is, however, a thorn in the flesh, and they all acknowledge that it is difficult to obtain rapidly finishing up old contracts, and the sepast week at from \$22.75 to \$23.50, showing an advance of fully 50¢ per ton ing work. Much of the dullness is attributed to the severe weather, and there appears to be a good deal of confidence in regard to the spring trade. One or two good-sized orders acknowledge that it is difficult to obtain will probably be closed to-day or to-morrow, \$30 for future delivery. There appears to

and both bridge and shipbuilders have sent be an increasing demand for Bessemer, and \$4.45 for Stove, with a company in the market quoting it at \$4.30. The Pennsylvania Coal Co.'s figures for all the other sizes are \$3.05. Grate and Egg, of all kinds, are queted at from \$4 to \$4.40. Vessels are not offering, and quotations of freights are not given. Nobody is willing to take a charter at the present moment, on account of the ice.

Bar Iron.-In the amount of business doing there is little cause for complaint, but prices are not what they ought to be. The nominal rate for Refined Bars is 2.4¢ at mill, but it is difficult to secure orders for round lots unless concessions are made, which absorb almost the entire margin for profit. It is hoped that this condition of affairs will be only temporary, and that with better weather and improved facilities for transportation, the demand will be sufficiently large to warrant a strict adherence to the card rate. In the meantime orders for lots of 200 tons and upward appear to be taken on terms very favorable to the buyer. In some cases, however, it has been found that extreme low prices meant something different in quality to Refined Iron. Reports from all sources, as regards consumption, ap-pear to be entirely satisfactory, and a steady and increasing business is looked for.

Plate and Tank Iron.-The condition of business in this department shows very little change, the demand being light and disappointing to manufacturers. Prices are quotably unchanged, but it would be difficult to obtain business unless at concessions, more or less important, according to character of order. Several orders of this description were taken last week, but as the weakness may be only temporary, we continue former figures, viz.: Tank Iron, 2.75¢; C. No. 1, 3.2¢; C. H. No. 1, 3.4¢; Flange Iron, 4½¢@ 4¾¢; Fire Box, 5½¢@ 5¾¢.

Sheet Iron.—No change whatever. A fair business is doing at unchanged prices for small lots, but to buyers of large lots manufacturers are giving special quotations. Retail lots may be quoted as follows:

Common Sheet, No. 26 to 28	e
Common Sheet, No. 22 to 2543	4
Common Sheet, No. 16 to 21	
Best Refined 1/4 @ 1/4 advance on the above.	
Best Bloom Sheets. No. 26 to 28 7	0
Best Bloom Sheets, No. 22 to 25	1
Best Bloom Sheets, No. 16 to 21	e
Common Red Plates, 3-16 to 16	.0
Blue Annealed, 3-16 to 16	
Rest Bloom Galvanized, discount	%
Second quality, discount	5

Steel Blooms.—No recent sales have been made, the advance to £6. 15/, c. i. f., having completely shut off business. A sale of 5000 tons German Blooms at £6. 5/ was made a few days ago, but the brand was new in the market, hence the discrepancy in price. From present appearances, business in importing Steel Blooms is almost at an end.

so that if other markets are emable to absorb their surplus, the American market, if at all active, will be the one that will have to include a lot of 1000 tons at a fraction over

Scrap Iron—Unchanged at \$28 @ \$30 for Wrought, \$20 @ \$21 for Cast, and \$16.50 @ \$17 for Stove Plate.

### PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, Prittsbungh, PA., Feb. 1, 1881.

Pig Iron.—This important interest is in a rather peculiar condition; while in some respects it is satisfactory, in others it is most unsatisfactory, both as regards the producer and consumer. There is no abatement in the demand, with prices still on the upward move, sales having been made the past week at a further advance of 50¢ per ton, but, at the highest price that can possibly be obtained, furnacemen claim that under the most favorable circumstances there is little or ne margin for profit, while consumers aver that the raw article is commanding more money relatively than the products, and this appears to be very generally admitted by all who have any knowledge of the Iron business. Consumers, apprehensive of a continued upward movement, are still anxious to buy to anticipate future wants, and some of them, so says report, have enough bought to last them for from one to three months. Producers, while anxious to get prices up still higher, are fearful that, by so doing, foreign importa-tions may be started up again, although well-informed authorities contend that American Pig can be advanced another dollar or two without coming in competition with the imported article. Since the first of with the imported article. Since the i \$1 to \$1.50 per ton on all grades of Forge Iron, and, notwithstanding it is higher now than consumers in point of fact are able to pay, the indications are that it will go stil Sales of Mill Iron were made during the past week at from \$22.75 to \$23.50

it looks very much as though it was destined to go considerably higher. Bessemer has advanced more than ordinary Mill Iron, but advanced more than ordinary Mill Iron, but the fact that so many furnaces are engaged in making it will, of course, keep down the production of Forge, and this is having its effect in stimulating the market for the lat-ter. The inquiry for Foundry Iron does not keep pace with that for Bessemer and good quality of mill, but the market is firm, and full prices are being obtained, Sales of No. I are at \$24.50 @ \$25, and No. 2 at \$23.50; Eastern Cold Blast Charcoal, \$37 @ \$40.

Ores.-The situation remains substantially as noted for some weeks past. The Lake Ore companies are as stiff as ever, feeling confident, as they do, that there will be a demand for their product all this year fully equal to the supply, and that they will have no difficulty in obtaining full prices. The report which has been in circulation, that the Edgar Thomson Steel Works had pur-chased a large quantity of Republic Ore, is contradicted.

Manufactured Iron.—The market continues active, but prices continue irregular and unsatisfactory. Mill owners nearly all quote Bars at 2.25 rates, 60 days, 2% off for cash, but somebody continues to sell considerably below, hence it is very difficult to effect a sale at the price asked. It is reported that sales are being made as low as 2¢, that is, for desirable orders, but it is alleged that the Iron is not first-class in point of quality. It is admitted on all sides that at the present cost of production Bars cannot be sold under cost of production Bars cannot be sold under 2.25 rates and afford any margin at all, yet, as already stated, orders are being accepted at from 2.10¢ to 2.15¢, and in some instances at the even 2¢. Sheet is quoted all the way from 3.75¢ @ 4¢ for No. 24; Skelp, 2.25¢ @ 2.30¢; Plate, 2.70¢ @ 2.80¢; Tank, 2.90¢ @ 3¢; Hoop, 3¢ @

Nails.-There is an increasing inquiry, especially for forward delivery, and prices are steady at quotations—\$2.85, 60 days, with an abatement of 10¢ % keg and 2 % off for cash.

Wrought Iron Pipe.-The discount on Gas and Steam Pipe remains unchanged at 65 @ 671/2 %, and orders, it is expected, will 55 to 57/2 %, and orders, it is expected, will soon commence to come forward freely. Boiler Tubes unchanged at 40 % off; Oil Well Casing, 72¢ W foot, net; ditto Tubing, 22¢. There is not much call for the latter, owing to the continued unremunerative condition of the oil market, and then the cold weather has largely curtailed development.

Steel.—There is an increasing demand for all kinds of Merchant Steel, and prices are steady. Best brands of refined Cast Steel, II & &: ditto Machinery, 7¢; Bessemer and Open-Hearth ditto, 5¢ @ 5½¢; semer and Open-Hearth ditto, 5¢ ditto Spring, 5¢; ditto Plow, 4½¢.

Railway Supplies.—The demand for Spikes continues active. One concern has orders booked for 100,000 kegs. Prices steady at 24¢, 30 days, for large orders, and 3¢ in a jobbing way. Splice Bars are quotable at 2.25¢ @ 2.35¢, and Track Bolts at 3½¢ @ 3¾¢, with Square and Hexagon

Muck Bars.-There is an increasing inquiry, and prices are firmer, in sympathy with Pig Iron. We now quote at \$38 @ \$40, cash, at mill, for Neutral to Red-short.

Scrap.-There is more doing in all kinds Scrap,—There is more doing in all kinds of Scrap, and prices are firmer and tending upward. Sales of Car Springs at \$44, cash; Car Axles, \$41; No. I Wrought at \$30, and Old Rails at \$32. Old Car Wheels, in the absence of sales, may be quoted at \$33 @ \$35, gross; Wrought Turnings, \$20 @ \$22, net; Boiler Plate, \$32 @ \$34.

Coke.—The volume of business would be much larger but for the difficulty in obtaining rail transportation-railroad companies cannot begin to meet the demand made upon them for cars. The consumption of Coke is steadily increasing, large shipments are being made in all directions, and prices are firm at \$1.50 & \$1.75 per ton, delivered

Window Glass.-There is nothing new every prospect of an active spring and summer trade. No change in the card or discounts.

### CHICAGO.

36 and 38 Clark Street, cor. Lake Street, CHICAGO, Jan. 31, 1881.

Pig Iren.-The prices for good ores have an upward tendency, and the market for Pig Iron is consequently firm. The demand during the week has been active. We hear of an order for 4000 tons Lake Sup Charcoal Nos. 1 and 2 being placed delivery here at something less than \$30 also 2000 tons Car Wheel Iron, and negotiations now under way for several large lots. for Eastern firms of not less than 3000 tons each, showing that the demand for Lake Superior Charcoal Iron is good, with very encouraging prospects for the spring trade. We quote as follows: Lake Superior Charcoal Nos. 1 and 2, \$32; No. 3, \$33; Nos. 4, 5 and 6, \$34; Scotch imported (according to brand), \$27 @ \$28; Scotch American (according to brand), \$25 @ \$28; Anthracite, \$23.50 @ \$25; Coke, \$25 @ \$27; Silvery (soft), \$23 @ \$25.

Rails.-Makers of Steel Rails have contracted so far in advance that quotations for early delivery are virtually out of the question. We quote Iron Rails, \$55.

Manufactured Iron.-The demand for Manufactured Iron is very good for this season of the year, and the market remains firm and steady. We quote Bar Iron, best, at \$2.50 for ordinary orders, and \$2.40 for car-load lots. Sheet Iron, from 10 to 14 guage, at \$3.40, and \$3.30 for large lots Tank Iron at \$3.40, and \$3.30 for large quantities. Hoop Iron, \$3.20 @ \$3.30.

Nails,-The demand for Nails continues fair, holders showing no disposition to sell at less than \$3 per keg, with the usual dis-count of 10 cents off for car-load lots and

Steel.-There is no change to report in quotations on Tool, Machinery and Agricultural Steel, the demand for which is good.
We quote Tool, 12¢; Machinery (open hearth), 6½¢; Crucible Machinery, 8¢;

Scrap Iron.—The market is somewhat firmer on all kinds of Scrap and demand good. We quote: Forge Scrap, \$30 @ \$32; No. I Wrought, \$27 @ \$29; Heavy Cast, \$22.50 @ \$25; Stove Plate, \$17 @ \$18.

### CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., CHATTANOOGA, Jan. 31, 1881.

The extremely unfavorable weather which began early in December, gave place the first of the week to a more pleasant season. The days have lately been bright, with cool nights and sharp frosts. Roads and streets are again passable, and manufacturers and dealers begin to feel the effects of the more attractive outdoor condition in impreved trade. There is still much complaint among heavy shippers on account of scarcity of transportation, these being most frequent and emphatic with Coal and Iron operators. The Coal companies affirm that even at the present high price of their products they are barely "making a living." General busi-ness has been fair, and quotations remain very steady. Dealers report no difficulty in getting full prices for manufactured articles, and all expect a brisk spring trade.

Pig Iron.—The trade in Pig goes on very steadily. There is nothing at all to say of it, except that it has maintained the last fall's prices beyond everyone's expectation. We quote: No. 1 Foundry, \$25 @ \$27; No. 2 Foundry, \$23 @ \$25; Gray Forge, \$20 @ \$22; White and Mottled, \$18 @ \$20; Car Wheel Metal. \$38 @ \$40. Wheel Metal, \$38 @ \$40.

Miscellaneous Articles.—If the present weather continues, the supply of Old Rails, which has not been at all excessive lately, will soon be up to or beyond the demand. There is a great deal of track in the South which will be renewed before summer opens. At present there is no change in the list. Old Rails are worth \$26, \$28. Wrengely the summer opens. Old Rails are worth \$26 @ \$28; Wrought Scrap, \$20 @ \$24; Cast, \$15 @ \$17; Old Wheels, \$28 @ \$30.

Ores.—We quote: 50 % Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25. Nails.—We quote Nails at \$3.25; usual discount on car-load lots and for cash. The demand continues good.

Manufactured Iron.—Bar is quiet and firm at \$2.35; Railroad Spikes, \$3; Track Bolts, \$4; Trastle Bolts, \$4.50; Fish Plate, \$2.50.

Coal.—The milder weather has tended to decidedly lighten the demand for household grades. Dealers have not as yet let down any in rates. Chattanooga housekeepers still pay \$5.50 per ton for choice. Atlanta, Augusta, and other remote points are so short of fuel that a cold night produces a sort of panic. The price continues there at \$9 @ \$10 per ton for best Lump.

Coke,—Furnace Coke, \$3 per ton at furnace.

Coke.—Furnace Coke, \$3 per ton at furnace; Foundry, 10¢ @ 12¢ per bushel.

Steel and Iron Rails.—We quote: Steel Bars at \$62.50 for American makes, \$60 for foreign. Iron, \$48 @ \$50; Small T is firm at \$55.

Lead.-We quote: Pig Lead, 41/2 @ 5 . Steel.-Plow Slabs, 3 in. and under, \$4.70; Black Diamond, ordinary sizes, 13¢.

JANUARY 29.- There is a more animated tone to the entire market, and the advanced prices which are being paid for Scrap and Old Rails, as well as for Lead, Copper, Spelter and other metals, are exerting something of a buoyant influence upon Fig Iron.
There is more inquiry on the part of consumers, and a more general disposition to make contracts for future delivery. And make contracts for future delivery. And yet we still hear of concessions upon round lots of both foreign and American Iron. We quote American Fig Iron at \$24 @ \$26 for No. I X; \$21 @ \$22.50 for No. 2 X, and \$20 @ \$21.50 for Gray Forge. These prices are f. o. b. at the port of shipment. Small spot lots will command \$2 % ton higher. Foreign lots will command \$2 \( \text{#} \) fon higher. Foreign

from is fairly firm at our last quotations; but
we hear of concessions of \$1 \( \text{#} \) ton on some
lots, and notably on Eglinton. We quote
Langloan Iron at \$24.50', @ \$25; Gartsherrie and Glengarnock at \$23 @ \$24;
Eglinton at \$22; and Middlesborough (Clarence) at \$18 @ \$19. Heath Iron sells for

NICHMOND. ballast at \$18.50 % ton. Old Rails are very firm, and some holders are asking \$34 for American at this point. We quote \$33 @ \$34 for American and \$29 @ \$31 for foreign. Manufactured Iron.—There is a foreign. Manufactured Iron.—There is a firmer feeling in Refined Bars, and though the stores are selling at 2½%, the mills are firm at the same figure; and if the present strong tone continues, an advance of ½% from store will be inevitable. The market can sustain a moderate rise of that kind very comfortably, but anything above 2¾% for Bar Iron would be likely to lead to importations. English Bars can be laid down portations. English Bars can be laid down here to day under  $2\frac{1}{2}\phi$ . The combination among jobbers of Norway and Swedish Iron in this market has been broken, and prices BALTIMORE.

4 single ton can be bought at the present writing at 34 f for Bars and 44 f for Shapes. Bacon & Co., Iron and Steel, are building a new store at 107 to 119 Oliver street, to which they will remove about March 1. Copper is firmer, and 1946 us the following, under date of January 31: Trade continues about the same as for the 46 1946 is now the bottom of the market for round lots of Lake, while 1946 is asked for forward delivery. Baltimore is firm at 1846 at 1846. The Boston store price is 206 for Lake and 106 for Baltimore. Lead are unsettled. A single ton can be bought 20¢ for Lake and 19¢ for Baltimore. Lead is higher, and 5½¢ is now the lowest quotation possible for car-load lots delivered in

### LOUISVILLE.

Messrs. GEO. H. HULL & Co., Commission Merchants, report to us as follows, under date of January 28: The demand since our former report has only been moderate, but prices are very firm; the supply is not excessive. Standard Southern Mill Irons are firm at \$22, cash. We quote as follows, all

No. z	Hanging Rock, Charcoal \$27.00 @ 28.0
No. 2	
No. I	Southern, Charcoal 25.00 @ 26.0
No. 2	
	Hanging Rock, Stonecoal and
Col	€0
	Hanging Rock, Stonecoal and
Col	ke
No. 1	Southern, Stonecoal and Coke. 23.00 @ 25.0
No. 2	22.50 @ 23.5
"Am	erican Scotch " 93.00 @ 25.0
Silve	r Gray 90.00 @ 22.5
Boote	:h 27.00 @ 29.0
	MILL IRONS.

their prices from \$1 @ \$2 \$\mathbb{P}\$ ton, so that Bars may be quoted from \$2.30 @ \$2.40 card here. Nails are moving as actively as many orders are being placed for future wants, parties paying down, and storing in small lots. Owing to heavy floating ice, navigation is again suspended.

### ST. LOUIS.

,	Hanging Rock Charcoal No. 1 \$29.00 @ 30.00
)	No. 2 28.00 @ 29.00
	No. 1
	No. 2: 25.00 @ 25.00 Southern Charcoal and Coke No. 1: 26.00 @ 27.00 Missouri "No. 1: 26.00 @ 27.00 Silver Gray. 22.50 @ 23.00
	MILL IRONS,
	No. 1 Cold-Short and Neutral 22.50 @ 23.50 No. 1 Red-Short
	CAR WHEEL AND MALLEABLE IRONS.
	Hanging Rock Cold Blast 48.00 @ 44.00 Warm Blast 35.00 @ 38.00 Lake Superior
	Southern 35.00 @ 40.00
	Messrs. Hoffer, Plumb & Co., Pig Iron and Iron Ore Merchants, 417 Pine street, write us as follows, under date of January 29: The demand for Iron continues good, while the general features of the market remain unchanged. Prices are firm.
	HOT BLAST CHARCOAL.
	Missouri, No. 1       \$27.00 ② 28.00         Southern, No. 1       25.00 ② 26.00         Hanging Rock       28.00 ② 29.00
	COKE AND COAL,
	Missouri       27.00 @ 28.00         Southern       25.00 @ 26.00         Ohio       26.00 @ 27.00
١	MILL IBONS.

CAR WHEEL IRON.

Mr. Asa SNYDER, Iron Merchant and Furnace Agent, writes as follows under date of January 31: This market continues firm with sales at quotations. No change except in bar iron-say, 2.6¢.

Scotch Pig Iron	
American Scotch Pig Iron	
No. 1	
No. 2	
No. 3	
Mottled and White	
Virginia Charcoal C. B. Wheel Iron	38.00 @ 41.00
Old Rails	26.00 \$ 28.00
Old Wheels	28.00 @ 29.00
Wrought Scrap, No. 1	29.00 @ 25 00
Cast, Machinery Scrap	21.00 @ 22.00
Richmond Refined Bar Iron	
Horse Shoes, Tredegar	4.00
Mule 15 st	@ 5.00

### BALTIMORE.

puse several modes, min summand prices
firmly maintained:
Ref. Bar Iron, 1 to 6 by 1/4 to 1 19 \$\mathbb{h} \times 1/4 \& 2\frac{1}{2} \& 2\frac{1}{2} \& \mathread{1} \& \mathread{1} \& \mathread{1} \& \mathread{2} \& 2
and Square 1 1 21/4 @ 21/4
Hoop Iron, 11/4 wide and upward. " 11/4 @ 11/4
Band Iron from 14 to 4 in. wide. " 2 @ 246
Horse-shoe Iron 11 23/ 0 4 6
Norway Nail Ro 19 " 6% @ 6% @
Black Diamond Cast Steel " 131/2 @141/41
Machinery Steel " 9 @ 9%f
Cast Spring Steel " 8 @ 8%4
Common Horse Nails " 10 @ 14 f
Perkins' Horse shoes, Wkeg of 100 lbs\$4.37%  Mule shoes
10 9 8 7 6
Putnam Horse Nails 1 1 22 23 24 268
Globe Horse Nails B b so sz 22 23 25\$
Railroad Spikes 2 @ 31/6

Baltimore Char Virginia C. B.	COR	. **	Hee	18 4.1	UI	• •		38.00 (A	40.00
						0 1			
Anthracite No.								25.00 @	20,00
NO.	B					 		33.00 B	24.00
240.	3					 		90,00 @	23.00
" Moti	led	an	d W	V hi	te	 		18.00 @	19.00
Charcoal C. B	Bloo	om	8				0	55.00 @	60,00
Refined Bar Iro	n					 		45,00 @	50.00

### Our English Letter

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) LONDON, ENG., January 17, 1881.

THE PAST WEEK

has not been productive of any event or feature of especial moment, with the exception of the quarterly meetings, to which reference will be made lower down. In most of the optimists, are clearly "caving in" and look have little or nothing to say or write in of the optimists, are clearly "caving in" and look have little or nothing to say or write in of the proposition to the general expectation of a born have little or nothing to say or write in opposition to the general expectation of a born have little or nothing to say or write in of the population to the general expectation of a born have little or nothing to say or write in the new parterns have probably said well, the new parterns have protracted frost almost universal impression is an excellent I have for thousands of pairs of these sknews the hing, and is of itself sufficient to bring about a certain share of prosperous activity, the work where a now, it is unmistably be now there, as now, it is unmistably be a work probable that the effect in any or a seconde edition of your late boom— to follow, as a matter of course, that or ward to expect the sais of ascertained facts, there is little fear. A came by the sais of ascertained facts, there is little fear. A came pattern, ""German agraduat one, and that its effects being currulative, may not reach their full fruition for many months to come. So far, both producers and consumers are proceeding most the same lines there will certainly and they continue to operate 'So much for aktes. To the coal owners by the new or probable that the rise will be a cardial one, and that its effects being universal into the provisions are so elastic that it puts from any months to come. So far, both producers and consumers are proceeding most the provision of the morning of the provision and provisions are so elastic that it pu card here. Nails are moving as actively as the continued arctic temperatures will admit. There is every confidence in the future, and does not follow, as a matter of course, that of the genuine article are in the market and does not follow, as a matter of course, that of the genuine article are in the market and we are to experience a sudden upward rush, are called "Acme pattern," "German up to the cast-iron of the genuine article are in the market and we are to experience a sudden upward rush, are called "Acme pattern," "German up to the cast-iron of the genuine article are in the market and we are to experience a sudden upward rush, are called "Acme pattern," "German up to the our leading metallurgical industries was are really overpressed with work; but, on the other hand, there are equally few which are in actual want of employment. The same remark may be applied to current prices. Few rates of quotations are abnormally stiff, but none are giving way in any appreciable degree, whether as regards iron, etcel or hardwares. Perhaps steel rails hold the top position in the market at the most well decreased in the proposition in the market at the most well decreased in the position in the market at the most wealthy of capitalists.

The manufactured iron trade of the whole of the North of England is very active, especially on plates and other shipbuilding iron. At the steel works there is abundant work, Exton being particularly pressed for rails. The Thomas-Gilchrist process is reported to be progressing, but I have not being little dose of hemment. They are remarkably firm, and are being contracted for at figures which are 10/ to £1 ahead of those marked down a few weeks ago. On the other hand, ordinary merchant bars probably occupy the "bottom step," and are not quotably higher, or in much better request than they have been any time these six months past. In this line the weak spot is still South Staffordshire where the rolling mill production which would otherwise be increased. Mr. fordshire, where the rolling mill production is large, the foreign and colonial outlet largely blocked by more favored home and Continental competition, and the local demand vastly cut up by the force of external and internal pressure. These conditions were amply exemplified at the quarterly miners' conference at Manchester that the mand vastly cut up by the force of external and internal pressure. These conditions were amply exemplified at the quarterly meetings of the ironmasters in and about the district in question, and, properly viewed, present the question of the future of the old ironmaking locality in a most serious light. Blocked in as it is by hostile railroad tariffs, district in question, and, properly viewed, present the question of the future of the old ironmaking locality in a most serious light.

Blocked in as it is by hostile railroad tariffs, the Midland district is placed in an unenviable position, and it will require very energetic efforts and liberal enterprise to extricate it from the difficulties and dangers by which it is surrounded.

This fact is patent when one looks around at the present time, South Staffordshire having less plant at work, more men badly was, it is thought, a sop to the trades unions.

Harrington.

67/
66/
65/
Maryport.

67/
66/
65/
Maryport. having less plant at work, more men badly employed and yielding greater complaints than any other part of the country. So far as the Scotch, Cleveland and West Coast than any other part of the country. So far as the Scotch, Cleveland and West Coast markets for pig iron are in question, there is little or nothing to record of an unfavorable nature. Prices have stiffened somewhat since I last wrote in your behalf, and the turnover is quite equal to the average of this season of the year, when shipments are always relatively small. The severe weather has probably done good to Scotland, inasmuch as the freezing of the canals has greatly hindered the importation of the Cleveland pigs which compete so vigorously with the native irons. In a corresponding degree Cleveland has suffered, but the deprivation

has been of relatively little import, owing to the enormous consumption within the boun-daries of Cleveland itself. Speaking of THE WEATHER scarcely known in this country for a very long series of years past. From about Christmas Day there had been local and partial falls of snow and frosts in the north and east, but the first snow of the season here Is higher, and 5\(\frac{1}{2}\) is now the lowest quotation possible for car-load lots delivered in Boston. Speicer has advanced to \$\frac{1}{2}\) \$4 \\ 600 \text{ for in.}\$ \$\frac{1}{2}\) \$\frac{1}\) \$\frac{1}{2}\) \$\frac{1}{2}\) \$\frac{1}{2}\) \$\frac{1}{2}\)

looked upon as being risky stock by ironmongers and others, and there are few of
the dealers who will carry stocks of them,
although to my mind there is nothing more
remunerative to a man who dare and can

The stock of them,
although to my mind there is nothing more
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The stock of them to make the stock of the stock of them to make the stock of wait for his return. The consequence is, that so soon as a set frost comes in all the skate shops are besieged with customers, and the makers, in their turn, are flooded with telegrams from the retailers in all parts of the country. There is never any varia-tion in the programme. No matter how many pairs of skates may be sold one season, quite as many appear to be wanted the next. An enormous number of German skates have been imported during the past for any but the most wealthy of capitalists.

The Lancashire owners, therefore, asked their miners to agree to a scheme of mutual insurance, whereby men and owners would contribute to a common fund, to be contibuted to a commo men believed his version, have now struck, have done some reckless rioting, involving

has improved on the week, both as regards warrants and makers' brands. The latter have in some instances (Carnbroe and Glengarnock, to wit) been officially advanced by 1/per ton. A very large business continues to be done in warrants, and the more legitimate consumptive requirements of the district around Glasgow are also growing larger. A few inquiries for Scotch pig are reported from the United States, but at the present relative prices on both sides the water I fail reminds me that it is worth while to relative prices on both sides the water I fail place it on record that during the past six to perceive where the profit would come in, or seven days we have experienced cold so long as our figures are 62/@64/, and yours \$22, with \$7 off for import duty. ducers are still piling their iron into the warrant stores, under the evident impression that the paper is more readily negotia-ble than the iron itself at the present time.

was, it is thought, a sop to the trades unions, whose influence was most useful to the pres-

collieries and other ventures where large numbers of more or less reckless and care-SCOTCH PIG IRON

degrees of frost in the parks, the frozen with a fair business doing. On Monday waters of which are estimated to have had from 150,000 to 180,000 skaters yesterday.

The singularity of the frost is its continuity, which is remarkable to us, although this, as on Wednesday the tone was better, from well as the temperature, are doubtless noth
52/10/2 @ 53/1 paid. Yesterday we were
ing remarkable to many of your readers in
the United States. The cold weather is
doing a good turn to the skate trade, which
is always brisk at such times. Skates are
shipments last week were 6182 tons, as

					No. r.	No. 3
G. M. B., at Gla	LECOW		 	 	84/	52/
Gartsherrie, at						94/
Coltness,	9.0				64/6	54/
Summerles.	6.6				62/6	34/
Langloan.	6.6				63/6	54/
Carpbroe,	0.6				59/	34/
Calder.	4.6				02/6	34/
Glengarnock, a	t Ardro	esan	 		50/	54/
Eglinton.	6.6				54/6	22 /
Dalmellington,	6.5				54/6	81/
Shotts, at Leitl					63/6	55/
Kinneil, at Bo'r	nees		 		54/	59/
Carron, at Grai	ngemou	th	 		54/6	53/
The Scotch	**	9. 9				

gaged.

CLEVELAND PIG IRON is quite firm at the following figures, which

are less than most smelters are willing to accept for deliveries extending over March. The figures here given are for G. M. B., net cash at makers' wharves in the Tees:

No. r Foundry 46/ Mottled...

2 44/ White...

3 42/ Refined Metal...

4 41/6
4 Forge. 41/

Other prices of the district are officially given by the Middlesboro' Chamber of Commerce,

WEST COAST HEMATITES which would otherwise be incessant. Mr. which would otherwise be incessant. Mr. cels of manufactures are to be had at the Macdonald, M. P., declared this attempt to subjoined figures, which are only capable of

	No. 1.	NO. 2.	No.
Cleator	75/	23/6	70
Lonsdale		66/	65
Workington	. 67/	66./	65
Lowther	. 67/	66/	65
Moss Bay	. 67/	66/	64
Harrington	. 67/	66/	65
Solway	. 67/	66/	65
Maryport		66/	65
Askham		65/	64
Several American	inquiries	for these	pig

have praise worthily anticipated me in getting out a table showing the destinations of our iron and steel shipments last and previous years. I give the firm the honors due. These are their figures :

	1872.	1878.	1879.	1880.
	Tons.	Tons.	Tons.	Tons.
U. States British N.	970,387	157,173	717,986	1,355,581
America	165,436	102,783	344,234	308,611
India	69,043	920,888	195.387	290,771
Australia British S.	94,891	205,388	167,784	210,483
Africa	3.733	9,346	22,628	22,319
Russia	137.717	86,253	211,680	304,107
Germany.	423,142	289,658	259.537	369,728
Holland	389,907	259,017	239,768	230.382
Belgium	163,413	90,544	83,750	116,628
France	108,195	112,587	101,370	317,170
Italy	19.557	47.963	62,603	52.775
Turkey.,	7,027	11,044	12,756	6,957
Norway.	13,172	23,692	14.320	7.087
Denmark. Spain and		5.044	5,048	805
Canaries	94,241	38,336	27.546	26,889
Egypt	14.484	2,914	2,957	3,968
Brazil	20,743	51,869	63,910	17,088
Peru	36,013	4,912	5,082	1,689
Chili Destinatns	2,553	1,411	802	5,256
not spec- ified	718,488	585,538	544,356	639,637
m	n		- 80- 8-	

ducers reported themselves well sold forward, and a fair show of contentment with the near future was made by all parties. At Wolverhampton, on the Wednesday, the meeting was moderately well attended, but the business done was not very extensive, many of the negotiations being prolonged until the more important meeting next day at Birmingham. Neither crude nor finished irons Birmingham. Neither crude nor finished irons were changed in value, Lilleshall cold-blast being £4. 5/, and hot-blast £3. 5/, while the list houses maintained £7. 10/ as their prices for marked bars, despite the contrary and contradictory rumors to which I made some reference last week. At Birmingham on Thursday there was a very large and influential attendance in the Exchange, numerous manufacturers and mars having numerous manufacturers and users having made it in their way to be present as much for the purpose of viva voce consultation on the trade outlook as for more strictly defined the trade outlook as for more strictly defined purposes. Many persons were there from London, Liverpool, Manchester, Sheffield, Leeds, &c.; probably quite as many hardware as iron men being "there, and thereabouts" on the occasion. Large speculative purchases of cinder pig at £2. to £2. /5 were made, some lots of 1000 tons in a line being reported. Of 146 furnaces in South Staffordshire only 44 are in blast, and of meanly 1000. shire only 44 are in blast, and of nearly 1000 in Great Britain 590 are at work. Hematites were very strong at 72/6 to 75/. Common sheets sold freely at £7. 10/, or thereabouts Common and various lots of galvanized iron in 100 300 and 500 ton lots changed hands. The galvanizers tried to put prices 10/a ton, owing to the increased price asked for spelter, but so far as I can learn they were not largely successful in realizthey were not largely successful in realizing the new rates. Best sheets were fairly quiet, although a few lots were bought for stamping and special uses. Messrs. Barrows "Wilden" B quality (angle) sold at £14; Woodford B, £12; and £19. 15/ for Messrs. Barrows best charcoal. Many of the producers declined to enter into long-dated forward engagements, expressing their firm belief in a near and considerable improvement in trade. Steel was on offer improvement in trade. Steel was on offer very freely, and changed hands in larger lots for miscellaneous hardware and general purposes than on any former similar occa-sion. Among the prices realized at this sion. Among the prices realized at this meeting may be comprised: Bars, £7. 10/; hoops, £6. 10/ @ £7; and strips, £6. 5/; stamping sheets, £12. 10, down to about £12; tank plates, £7. 10/ @ £8; working up bars for fencing and like uses, £5. 15/; Staffordshire all-mine pigs, £3. 5/; hydrates, up bars for fencing and like uses, £5. 15/; Staffordshire all-mine pigs, £3. 5/; hydrates, £3. 2/6; part mine, £2. 12/6; and common, £2. 2/6; Barrow grey forge pig, £3. 15/ @ £3. 12/6 and Blaenavon, £3. 15/ at the works. Welsh bars steady at £5. 2/6 @ £5. 5/, and largely sold thereat on Indian account. Iron rails firm, and a very considerable number of sales reported at about account. Iron rais firm, and a very considerable number of sales reported at about £3.7/6 @ £5.12/6 \$\pi\$ ton. Old rails firmly held at £4.5/ @ £4.10/ for D. H., and £4.5/ for flange. Good wrought scrap in request at £3.10/ @ £3.15/ \$\pi\$ ton f.o.b., but select parcels rather scarce. Other scrap abundant at £2.5/ @ £3. \$\pi\$ ton. The tin-plate manufucturers held ther quarterly meeting at Birmingham on Thursday, and meeting at Birmingham on Thursday, and discussed the vexed question of restricting the production, but were unable to arrive at a decision, and separated on the understanding that at present each member of the Association should do as he "darn

### FOREIGN.

PRANCE.

(Moniteur des Interets Materiels.)

Paris, Jan. 16, 1881.—Metals.—Business has resumed its normal course: the general tendency is a decidedly favorable one; the weather has become winterly once more, which stimulates trade; politics have ceased to preoccupy people; agriculturists are of good cheer, snow now covering their fields. Metals have become more active, in consequence of some slight concessions made by holders, and we now quote Copper: Chili Hars, 162.50 @ 165; Ingots and Slabs, 170; Best Selected, 171.50; and pure Corocoro Ore, 165.50, showing a general giving way of 1 to 2.50 francs per 100 kilos. Tin is uniformly held at 245 francs for all sorts, which is a decline of 5 franes per 100 kilos. from our last quotations. Lead has been tolerably steady. Havre has remained sustained at 38 francs, but we have declined 25C. (10 28,75) here. The only metal which has been firmly maintained has been Spelfer, which we quote as before—43.50 decided. This metal is in an unusually firm position and has apparently a good prospect before it. Iron.—As had been anticipated, the new year has been inaugurated in a most promising manner. The demand all over France is good, and so it is in neighboring countries. Consumption this year will be unusually large, both for public and pri-The demand all over France is good, and so it is in neighboring countries. Consumption this year will be unusually large, both for public and private requirements. This all are aware of; hence there is a firm undertone, which needs no speculation to sustain it or stimulate it, although a speculative movement may still arise at any moment. Coal.—While Iron continues to harden, Coal is dull, although less weak since we have been favored with genuine winter weather.

### BELGIUM.

BRUSSELS, Jan. 16, 1831.—Iron.—There is again a slight improvement to be recorded in prices for the week under review. Orders now multiply and the market assumes a very strong attitude. The machine shops are those most favored winc commands just at present. Next to them there are the Steel works, also doing remarkably well. The rolling mills, the tool and bolt manufacturers have become very firm in their pretensions, and will not abate from the rates they have now established. They are, indeed, so indifferent to all "future" business, now that they have got plenty of orders for immediate delivery, that they decline engagements for more distant business at current rates. Thus great strength now exhibited in the Iron trade begins to spread to Metals, now all steady, including Spelter, which has become very firm here at the enhanced prices it has recovered. So far, there has been no speculation here, neither in Iron nor in Metals. The present situation of both, therefore, materially differs from the one in January last year, while the elements which underlie it are based on the fact that this year the grain crops in Western Europe have been good, and that prospects for a good spring trade are decidedly encourasing. Coal.—Since we have cooler weather again, the demand for Coal for domestic purposes has revived. Industry, which is active in all branches, now also takes the market begins to strengthen. The price paid for household wants is 14 @ 15 francs, and for industrial purposes, 10 @ 12 francs per ton. (Revue Universelle.)

### (Borsenhalle.)

lished, for news reaching us from Belgium. France, the Sarre, Moselle and England unanimously announces an improvement in the position of Iron. As soon as raw material advances, all wrought goods will be proportionately enhanced in value. Coal has not changed materially at Dortmund, but as the cold weather has now lasted for some time, there is a better outlook, and stocks in the hands of dealers may soon be exhausted. The wire-drawing mills at Altena Iserlohn have so far been driven with water-power, but the cold compels them to use steam exclusively now; they are thus obliged to buy Coal, but on the Rhine navigation is arrested by the ice after it had just been resumed, when the water had fallen somewhat. Holland nowadays takes a great deal of Rhenish Coal instead of Belgian, for the latter country's freight rates cannot compete with the cheap rates from Rhenish-Prussis. The Lorraine-Luxembourg Pig Iron syndicate, together with the Moselle and Sarre rolling mills, raised their prices again on 3d inst, the second raising since Dec. 10. In Upper Sliesia the Pig Iron situation remains unfavorable; prices are low there with the sole exception of Foundry Pig, which is tolerably active. Merchant Iron, on the other hand, has improved materially there. Metals.—Since our last report metals have been steady, and Spelter has even been looking up a little; the general tendency is a favorable one, prospects for the spring trade being of an encouraging nature, not only in Germany, but also in neighboring countries. Without looking forward to any very extraordinary advance in prices—unless speculation interferes—we are of opinion that some amelioration in values from now forward is one of the probabilities, the more so as stocks in the hands of both dealers and consumers in the interior are understood to be moderate. We do not alter our last week's quotations.

### (Koch & Vlierbe

ROTTERDAM, Jan. 17, 1381.—Tin.—Is firm, with out much doing, Banca being at 56 guilders per 50 kil.m., and Billiton at 55, 50. The ensuing little table shows the course of prices of Banca Tin in Holland on the 1st of each month since 1873:

PRICES OF BANCA TIN IN HOLLAND SINCE 1872, II

GUILDERS, PER 50 KILOS.

### AUSTRIA.

(Austrian Trade Journal.)

VIRNNA, Jan. 16, 1831.—Iron.—Pig Iron is a little less firm, but producers show no anxiety to sell at current rates, and the market may soon recover its buoyancy in view of the approaching spring season. Rolling mills in Bohemia have meanwhile reduced the price of Merchant Iron 1 florin the 100 kilos, notwithstanding a rather increased activity in machine shops there, latterly. There are again rumors here of fresh locomotive orders from France, but even should this news be confirmed it would not be of much immediate importance inasmuch as our locomotive works have secured work enough for three months to come. It may be mentioned that the Munich locomotive works have just erected a sister shop at Linz. The Austrian Merchant Iron combination held a meeting here recently, at which its dissolution was determined upon. At an adjudication for 4000 tons Steel Rails wanted by our Northern Railway, six German firms were invited to hand in tenders, but only three complied, the remaining three declaring that the guarantee conditions on that line were too stringent for them. Iron prices are unaltered here. We quote Pig. 44 @ 55; Morchant Iron, 105 @ 115; Sheets, 155 @ 185; and Pillars, 121 @ 125 florins per ton. Metals are steady. We quote Copper, 7; @ 78; Tin, 119 @ 120,50 @ 21,50; Shot, 25; Litharge, 20 @ 26,50; Spelter, 19 @ 20,50; Gun Metal, 85; Brass, 45 @ 60; Nickel, 97 %, 4 forins per kilo.; Bismuth, 12 per idem; Blue Vitriol, 28,50 @ 32; White ditto, 12,50 @ 16; Green ditto, 4 @ 4,50; Minium, 38,50 @ 29,50; Sugar of Lead, 43, and Zinc White, 33 @ 44. (Austrian Trade Journal.)

### (Weber & Co.)

(Weber & Co.)

VALPARASSO, Dec. 2, 1880.—Copper.—Since our last report the price has fluctuated between \$20 and \$20.50 per quintal; sales, 20,574 quintals. Our Nitrate market has been quiet at first, but gradually more favorable European advices caused some anima ion, which finally led to large dealings at rising prices. Sales, 386,000 quintals at \$3.41 @ \$3.52\%; 05 @ 50\% at 43\% @ 43\% freight to England, and 48\% @ \$1\% Dec. 10 the Continent. Coal has been unaltered at 28\%. Steam Coal, here, and \$10.50 smelting at Chanaral. Freights are fully upheld, there being a good demand for vessels. Exchange has been fluctuating between 28d. and 30d., dlosing at 20\%d. @ 29\%d. for 90 days, on London, per dollar.

### LABOR AND WAGES.

The coal miners' convention at Pittsburgh, Jan. 25, among other matters, resolved not to insist at present on pay every two weeks.

Of the 750 prisoners in the two pening. It is satisfactory to note that the Appeal Division of the Imperial German Patent Court has just reaffirmed the validity of the 759 prisoners in the two penitentiaries of Western Pennsylvania at the close of 1880, there were employed at shoemaking, 289; light forgings, 141; broom making, 68; cigars, 47: tin shop, 19; making prison building work, 115; iron work for new building work, 115; iron work for new buildings, 36; infirm, sick and idle, 41. The rate paid by contractors was so cents a day per convict. The incomes of the Appeal Division of the Imperial Cerman of the Court in Countenancing it. The bill was, the honor of having been the original inventor of the telephone, is described as one of those shiftless individuals who are always planning something new. He resides at Milltown, Cumberland County, about six miles from Harrisburg, having lived therefore, dismissed with costs.

From the record at Lloyd's it is shown miles from Harrisburg, having lived the honor of having been the original inventor of the telephone, is described as one of those shiftless individuals who are always planning something new. He resides at Milltown, Cumberland County, about six miles from Harrisburg, having lived there original inventor of the telephone, is described as one of those shiftless individuals who are always planning something new. He resides at Milltown, Cumberland County, about six miles from the Torginal of the honor of having been the original inventor of the telephone, is described as one of these original inventor of the telephone, is described as one of these original inventor of the telephone, is described as one of these original i

The glass bottle manufacturers, at their recent meeting in Chicago, decided that the expense of grinding fruit jars, hereto-fore borne by the men, should be paid by the manufacturer.

The strike at the mill coal banks at Wheeling still continues.

The workingmen of Pennsylvania are urging upon the Legislature of that State the passage of an eight-hour law, a compulsory education bill, and the repeal of the tramp act.

The product of two 6½ ton converters of the Cambria works at Johnstown, Pa., for the week ending January 30, in 141 hours, was 504 heats of steel, weighing 3318 gross tons. The largest actual 24 hours' work was 90 heats, weighing 595 gross tons. For the month of January there were 2025 heats made, weighing 13,343 gross tons. For the last 12 months there were 19,612 heats made, weighing 126,194 740 2240 tons. made, weighing 126,194 740 2240 tons.

Hambergo, Jan. 15, 1881.—Iron. The improvement to bortmund in the Iron trade takes a firmer foot-told, both dealers and consumers, therefore, show treater inclination to contract for future delivery, while the works are holding back, not wishing to nake engagements of that kind at ruing rates, the region of the purpose of the bright of bortmund a few days ago had a meeting, held for he purpose of agreeing on current rates, but so are no combination has been formed. Nobody oubts, however, that higher prices will be estab.

### Improvement in Mop Pails

The accompanying cut represents an im provement in mop pails, recently introduced to the trade by Mr. Arther L. Burtis, of Lockport, N. Y. The intent of the invention is to provide convenient means for wringing a mop without the stooping posture and twisting motion usual to such work, and which is so trying and exhaustive as to make mopping one of the hardest operations in connection with household labor. How the wringing is accomplished by this apparatus may be seen at a glance. When the pail is in use, the bail is thrown down in



front, where it can be lifted with the foot sufficient to separate the rollers, so as to allow the cloth to drop in easily. When this low the cloth to drop in easily. When this is done the bail is dropped, and the foot is applied with enough pressure to wring the cloth dry as it is drawn up between the rollers. Owing to the peculiar shape of the box or pail, it is very difficult, if not impossible, to tip it over or spill the contents. The inventor claims that for simplicity and practical utility, the article has never been approached. He also informs us that a single sheet of 14 x 20 tin makes the box complete.

### The Progress of the Basic Process in Europe in 1880.

The progress of the Gilchrist-Thomas process for the dephosphorization of iron has been both steady and marked during the past year, although it has made greater advances on the Continent than in our own country. In England it has been in continuous operation at the Eston works of Messrs. Bolckow, Vaughan & Co., at Middlesbrough, since the 18th of October last Previously to that time it had been tried at Eston, but without success, owing to the converters being too small. Two 15-ton converters were, however, put up, and on the day mentioned they were started, and have been working day and night ever since with every success, commercially as well as scientifically. The metal is taken direct from the blast furnace and is used without remelting. The pig employed con-tains about 1.5 per cent. of phosphorus and 1.2 per cent. of silicon, and is made from Cleveland stone, without any admixture. The steel contains an average of about .05 or .oo per cent. of phosphorus and about .40 per cent. of carbon. The basic lining ma-terial is manufactured by Messrs. Bolckow, Vaughan & Co. themselves, and so satisfied are they with the working of the process that they are erecting two more converters of large capacity, which will be started in about two months' time. Beyond this, seven other English steel-making firms have taken licenses, and the avertion of several spacial licenses, and the erection of several special works is in contemplation for carrying on the dephosphorizing process with new and appropriate plant and machinery. With regard to the progress the process is making abroad, we may observe cess is making acroad, we may observe that in Belgium there are now four converters at work, with excellent re-sults, while one large new factory is in course of erection for the process and two nore are contemplated.

more are contemplated.

In Germany the process is being steadily carried on at Hörde, Ruhrort, Aix-la-Chapelle, Kaiserlautern and other places. The Hörde Company have erected new and special works for the Gilchrist-Thomas process, which will be started in a month or so. Messrs. De Wendel and Messrs. Stumm have also erected new works, which will be started upon the process early requirements of the new process. As indicating the general progress, we may men-

can trade was asked yesterday what the

bringing the belligerents to terms. revival of trade will come by-and-by.

### Steam on the Canals.

The practicability of applying steam to canal navigation may be said to have been demonstrated by Mr. Wm. Baxter, under the incentive of a heavy bonus from the State Treasury. Fifteen steamers were built and run on the Eric Canal with varying success, until at last all right and title thereto passed into the hands of Mr. H. H. Van Dyck, formerly assistant United States Treasury in New York City, who has since maintained the line in good order, meanwhile running the boats mostly in pairs, one pushing another by means of in pairs, one pushing another by means of a rigid coupler, on a plan known as the "Illinois system." It is reported that the boats did very well last year, carrying 15,000 bushels each trip, with a draft of 6 feet of water. In addition, the "Planet" and "Hull" lines of steam canal boats have been in operation since last spring, each employing about a dozen steamers. Run singly, they carry 7500 bushels; when coupled, they together carry 16,500 bushels—the cost in the latter case scarcely exceed-

ing that of one running alone.

The report made by Messrs R. D. Ford, of Buffalo, and E. P. Roberts, of New London, and submitted to Hon. S. B. Dutcher, Superintendent of Public Works of the State of New York, contains the following figures, which clearly exhibit the relative merit of the various systems of moving freight in the cauals. They find that the comparative cauals. They find that the comparative time of towing between Buffalo and New York and return was:

25 to 28 18 to 22

They report furthermore that the cost of propelling boats through the Erie Canal was as follows:

Horse power, two teams to boat. 13c. to 17c. Stram canal boat. 15c. to 18c. Steam canal boat, with consort. 18c. to 20c. Boats towed by cable system. 20c.

In view of these facts, it is not surprising to find that the canal men are rapidly ac-commodating themselves to the new order of things. The first movement of this kind was one year ago, when the Anchor Line of the lakes established the Planet line on the canal. From that date the spirit of re-sistance has almost ceased, so that now the boatmen are sending in orders for engines

almost every day.

The essential principles observed in the construction of the first steamers built are all retained, but they have been greatly simplified, a better engine being made at a lower cost. The modern canal steamer costs about \$2600 for the engine and \$3500 for the hull, or say \$7000 altogether for a first-class boat, including equipment. The conductors of the Planet line speak without reserve in commendation of the canal steamers built within the past year, and engined at Newark, N. J. They consider them admirably adapted to canal purposes, because they can be used on other waters when desired— either on the Southern coast or in Chesa-peake Bay or Albemarle Sound—during the winter months, or be dispatched to the Northern lakes, carrying from 240 to 250 tons. Unlike the horse boats, they need no towing, and can move about independently on rivers or harbors. Their first cost is claimed to be less than that of any other craft of equal capacity now employed in the same kind of work. For the reasons inti-mated, it is predicted that the modern canal steamer must speedily supersede the old-fashioned boats, and become the most numerous class of vessels frequenting New York Harbor. Five or six thousand horse boats transformed into steamers suited to a wide range of service and capable of moving anywhere, would make a formidable fleet. It would be equivalent to a material enlargement of the State canals, but not beyond the requirements of traffic in transporting the enormous volume of agricultural products seeking the seaboard.

### The Beginnings of the Telephone.

ocents a day per convict. The income from the labor department was: Shoe shops, \$3,4,129.80; chain shops, \$13,627.40; broom shop, \$6,676.70: cigar shop, \$4,623.10; tin shop, \$2,043.60; total, \$61,100.60.

The cate paid by contractors was 50 exhibits the Piecess continues to carried for a long term of years. He has a natural for a long term of years. Josuf new works for carrying on the process upon an extensive scale are approaching completion. The process is now being worked in Poland, and will shortly be adopted by some other Russian firms. It is also being pushed in America, where new converters are in course of erection for working the process specially, and which will have the capacity for an output of 200,000 tons per annum. Some existing works are also being modified, so as to meet the requirements of the new process. As in thought of nothing else. He began with the electro-magnet, and in course of time ar-ranged a sounder and other machinery, so as success with the telephone, and how he used to get them to stand with the tin tube at made, weighing 126,194 740 2240 tons.

Borgner & O'Brien, Twenty-third street, above Race, Philadelphia, manufacturers of fire brick and clay retorts for heating and melting furnaces of every description, report tion. Their trade, both home and foreign, is constantly on the increase, particularly in the department for special-shaped blocks and tiles.

can trade was asked yesterday what the effect, if any, would be upon the trade between New York and South America, of the workshop and talked to them, and all aver that they could hear him very plainly, and that he could hear them when they spoke. It was a success as far back as 1868.

Substitute of the workshop and talked to them, and all aver that they could hear them when they spoke. It was a success as far back as 1868.

We with a paid-up capital of \$25,000. They are than a month, and no improvement can be expected. New York merchants believe that the terms of peace are prompted by English holders of Peruvian bonds; that the terms of peace are prompted by the record of any preticular the workshop and talked to them, and all aver that they could hear them when they spoke. It was a success as far back as 1868.

We was asked yesterday what the cifect, if any, would be upon the trade between New York and South America, of the workshop and talked to them, and all aver that they could hear them when they spoke. It was a success as far back as 1868.

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by experts, to settle upon the claim of priority of invention. At present he is engaged on a telephone transmitter, which, it is claimed, will make the volume of sound sufficiently loud to be heard all over a large room. He is not done with his telephone experiments, but is constantly working on improvements. Last summer he and the Harrisburg parties sold their right and title in the invention to a party of New Yorkers, who formed the People's Telephone Company. The latter have been restrained by injunction from manufacturing any more

### The Pennsylvania Railroad's Earn. ings for 1881.

The December earnings of the Pennsylvania Railroad Company show a very decided increase in the expenses, as compared with the corresponding month of last year. While the gross earnings are greater than for any single month of 1879, the expenses also exceed those of any month in the year, the percentage of increase being almost one-fourth, while the gain in the gross is less than 3 per cent. The result has been to bring about a loss of more than one-fourth in the net earnings. The figures for De-cember enable us to fill out the report for the year. The earnings of the Eastern lines have never been so large. They have only once before reached forty millions, but for 1880 they exceed forty-one millions and a quarter. The increase in the expenses has been greater than in gross earnings, so that the increase in the net is 2 per cent. less than the gain in the gross. The net gain, however, is equal to more than half the en-tire amount paid out for dividends, to say nothing of the gain on the Western lines. It will be remembered that the Pennsylva-nia Company earned comparatively nothing anal steamers, with consort, load both anal surplus of almost a million and a pany.

They report furthermore that the cost of propelling boats through the Eric Canal was follows: the figures of last year, or \$1,422,870. Adding this to the surplus gain for the Eastern lines, we find that the operations of the company show a net gain of \$3,830,256. This is equal to a little more than 5 per cent. on the capital stock. In 1879 the company carried shout 61/2 per cent and point 1/2 per cent. earned about 6¼ per cent. and paid 4½ per cent. on the capital stock. Last year the company paid 7 per cent. and earned about 14, to say nothing of the profit on the operations of the Western lines, which would have enabled them to divide about 4 per cent. more. We have very little doubt that cent. more. the accounts of the company, when fully made up, will enable them to show a profit on the year's operations equivalent to 14 or 15 per cent. The figures are as follows:

Date.	Gross Earnings.	Net Earnings,		
December, 1879.	\$3,453,924	\$1,941,870	\$1,512,054	
December, 1880.	3,547,827	2,421,575	1,126,252	
Increase	\$93,903	\$479,705	\$385,802	
Per cent	2.7	21.7	25.7	
Year, 1879	\$34,620,279	\$20,382,740	\$14,237,538	
Year, 1880	41,260,072	24,625,047	16,635,024	
Increase Per cent	\$6,639,753	\$4,242,307	\$2,397.486	

Decorated Tin Plates .- The case of Flower vs. Rayner, involving the validity of the patent for the decoration of tin utensils controlled by the Tin Plate Decorating Company of this city, was decided on the 26th ult. The case was brought in the Circuit Court of the United States for the District of New Jersey against Thomas J. Rayner, a well, known manufacturer of Rahway. The plaintiffs claimed, in effect, that their patent gave them exclusive right to decorate tin plates by the lithographic process which the defeadant had been in the habit of doing for a number of years, and which had been, indeed, done to a very considerable extent by manufacturers of tin utensils throughout the country. The plaintiffs were represented by Mr. Frederick H. Betts and Messrs. Nash & Holt, and the defendant by Mr. Rowland Cox, of this city. The case was argued up-ward of a year ago, since which time it has been held under advisement by the court. Judge Nixon has finally decided that the patent is totally invalid, not only because it is broader than the original, but because the description is not sufficiently clear to justify

	1			
	Sailing vesselsSteamers	Tons.		Average, Tons, 462 504
7	Total	46,512		****
	Sailing vessels	30,998 4,846		476 807
	Total			
	British. Forei Sailing vessels 57 Steamers 15	gn. B	ritish. 51 5	Foreign.
	Total 22	-	46	9.0

As an illustration of the magnitude of the dicating the general progress, we may mention that in December, 1879, only seven converters were at work on the Thomas-Gilchrist process; that number, however, was more than trebled in December, 1880, and it will be further increased early in the present year.

Commercial Effects of the Peruvian Defeat.—One of our largest shippers and before the process with the telephone, and how he used because of the process of the proc been approached by the record of any pre-

BA



Though we have occupied this identical s ace in The Iron Age for more than twelve years, and though we have been the leading Bit Brace manufacturers of this country during all that time, we have seldom spoken of it in our advertisement, for the reason that all the leading dealers were supposed to know it. Since we first put

## THE BARBER IMPROVED BIT BRACE

junk stores, and are now forgotten. It is true, some of them died violent deaths, but most of them perished from constitutional weakness. We do not offer to meet competition, as no one else can make our Brace, and we have nothing to compete with. Others tion, as no one else can make our Brace, and we have nothing to compete with. Others might if they would make their braces of steel, but it is much more expensive, and no one can tell the difference until the brace is put into use. All of our Nickel-Plated Braces are made of rolled steel, with forged steel jaws, which will never wear out. We formerly made malleable iron jaws, which in time wore out. All such we will now replace with steel for 25 cents per pair. They are all one size and will always fit. Our Ratchet Brace at the present time has no competitor in the market. Dealers who sell other styles of braces will find it to their interest to buy their stock of ratchets from us.

The price of Barber Braces has not been changed for many years, and we do not anticipate any variation in the near future. Thanking our customers for past favors, we now solicit their future orders.

now solicit their future orders.

## MILLERS FALLS CO.,

74 Chambers Street, New York.

## **HEATON & DENCKLA HARDWARE CO.,** Hardware Commission Merchants,

507 Commerce Street, Philadelphia.

E. & G. BROOKE'S "Anchor Brand" Nalls, Brads, EXCELS OR MILLS, Genuine Turkish Emery.
BROWN & BRO. 8 Brass and Copper Wire,

AMERICAN SCREW CO.'S Screws.

D. R. BARTON TOOL CO.'S Edge Tools, &c. FRANCE'S Shutter Holders.
Anti-Window Rattlers, Brans and Nickel-Plated. WESTERN FILE CO.'S Cast-Steel Files.

MALLORY, WHEELER & CO.'S Door and Pad Locks.

UNION MANUFACTURING CO.'S Butts.

Rivets, Spoons, &c. GAYLORD MANUFACTURING CO.'S Till, Chest and Cupboard Locks.

AMES' Genuine Chester Emery. COLWELL & COLLINS, NORWAY BOLT CO., Norway Carriage and Tire Bolts.

PLYMOUTH MILL CO.'S Black and Tinned Iron WESTERN FILE CO.'S Cast-Steel Files.

AMERICAN SHEAR CO.'S Shears and Scissors.

H. M. MYERS & CO.'S Shovels, Spaces and Scoops.

STEELE & SONS' Wrought Handle Sad Irons.

HUSSEY, HOWE & CO.'S Black and Tinned Iron Rivets.

AMERICAN MACHINE CO.'S Fluters, &c.

STUART, PETERSON & CO'S Tinned and Enameled Ware, &a.

HUSSEY, HOWE & CO.'S Black and Tinned Iron Rivets.

Also a large line of Heavy and Shelf Hardware.

## RHODE ISLAND HORSE SHOE CO.,

Works at Valley Falls, R. I., and Buffalo, N. Y. Office, 31 Exchange Place, Providence, R. I. C. H. PERKINS Gon'l Manager, R. W. COMSTOCK, Secretary

# NATIONAL Horse Nail Co.

FINISHED



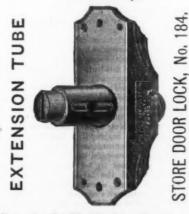
These nails are made of the best brands of NOR-WAY IRON, and are guaranteed to be equal to

NATIONAL HORSE NAIL CO., VERCENNES, VT.

DURRIE & McCARTY, Agents, No. 97 Chambers St., New York

A. E. DEITZ.

(Successor to Barnes & Deitz,) Manufacturer of Store Door Locks, Night Latches, Padlocks, Drawer Locks &c., with Flat Steel Keys.



Durrie & McCarty, Agents, 97 Chambers & 81 Reade Sts., New York.

Horse, Mule & Snow Shoes of the Perkins Pattern. All kinds Wagon & Carriage Axles LAMBERTVILLE IRON WORKS. LLOYD, SUPPLEE & WALTON, Phlladelphia.

Patent Screw Wrenches

MARCH 23, 1869, REISSUED 1870.

NOVEMBER 10, 1863, FEBRUARY 23, 1864, REISSUED JUNE 1, 1869, IMPROVED AUG. 1, 1877.

The back thrust when in use borne by the SHANK instead of the Hand's None genuine unless stamped "L. CORS & CO.

Worcester, Mass.

Warehouse, 97 Chambers St. & 81 Reade St., N. Y. DURRIE & McCARTY, Sole Agents.

PUNCH. WHAT IS IT?



DURRIE & McCARTY, New York.

ESTABLISHED 1834.



NEW HAVEN, CONN., U. S. A.,

BRONZE DOOR FURNITURE, &c.

Gold Bronze Trimmings in NEW DESIGNS. No extra charge for our NEW IMPERIAL FINISH.

See samples of NEW LINE low priced Reversible Knob Locks, No. 2200, &c. with New Keys and variety of changes.

WAREHOUSES,

Where samples and a stock of our goods may be found and orders filled upon same terms as from the factory;

RCENT & CO., No. 37 Chambers Street, New York.

HEATON & DENCKLA HDW. CO., No. 507 Commerce St., Philadelphia, Pa. OTIS D. DANA, Nos. 22 to 32 Pearl Street, Boston, Mass. JOHN R. KELSO, Jr., No. 23 S. Charles St., Baltimore, Md.

## DAVID HYMES & CO.,

92 Church Street, New York,

Hardware Manufacturers' Agents Patent Toe Calks

The Best and Cheapest Egg Beater in the Market.

BARGAINS IN HARDWARE AND CUTLERY.

Low estimates made on all kinds of small castings in the rough, japanned or varnished

WALKER'S

## Forged Horse Shoes SHOENBERGER'S

Superior to any in market. Send for prices and samples

A. BUSSING, General Agent, 4 Warren St., New York.



BROWNING, SISUM & CO., 85 Chambers St. Manufacture

Belt Hooks, Cetters, Spring Keys, D Rings,

Staples, and everything pertaining to wire bending.

Factory, BROOKLYN.



### THE IDEAL COFFEE POT.

Patented July 24, 1880.

The engraving shows that the "Ideal" is the most perfect, simple nd complete pot ever produced, and as such is the best selling pot a the market. It sells on its own merits. By its use the coffee is lways regular, of the same quality, strength, and perfectly clear, child can make better coffee in this pot than can an adult by the dimethod of boiling. It is without doubt the best pot in the world of asy, and you can sell them. They are used and recommended by rs. President Hayes, Mrs. Bishop Simpsen, Hon. John Jay, Gen. B. lint, California, and by everybody who has used one.

Prices: Polished Tin, per dox. 3 ps. 87.86; 5 pt., \$10.20; 7 pt., \$13,20; pt., \$15.20; Nickel Silver, 3 pt., \$15.5 pt., \$10.20; 7 pt., \$44; 0 pt., \$87.

IDEAL COFFEE POT CO., 622 Filbert St., Philadelphia, Pa.



## Wilson Bohannan,

BRASS PAD LOCKS or Railroad Switches, Freight Cars, and the Harder Trade. All aises, with Brass and Steel Key, with and without chains.

Patent Horizontal Rim Cylinder Night Latch. elf-adjusting to doors of any thickness, with Patent RIGHT OR LEFT HAND.

PASSENGER CAR LOCKS, Bronzed, Nickel-Plated and Japanned BROOKLYN, N. Y

## Notes

Our Chicago correspondent sends us the following items of interest, which, owing to the obstruction of the railroads by snow, were not received in time for classification

in our department of manufacturing news:
The Robt. Atchison Perforated Metal Co., Chicago, manufacturers of perforated sheet metal, report trade very good and are running on full time.

Messrs. Shumway, Burgess & Co., manufacturers of bolts, report trade very brisk, are working twelve hours per day, and expect to do a large business this spring. The Chicago Screw Co., manufacturers of

machine screws, employ a force of 50 hands, and are constantly increasing. They report business good. Their capacity, estimated in dollars, amounts to about \$100,000 per annum.

Messrs. Baragwanath & Pim, proprie-tors of the Pacific Boiler Works, Chicago, are very busy just now, working one set of men

very busy just now, working one set of men day and one set night on their patent feed water heater. They turn out, on an average, about \$2800 worth of work per week.

Messrs. Warner & Swasey, Chicago, manufacturers of all kinds of special tools and machinery, report business excellent. They have nearly finished a new machine for constituting which is one of the most income. for gear cutting which is one of the most complete machines of its kind made; it is east in one solid bed, and has a radial plate with about 25,000 holes, to which is attached a womb gear, outside of which are 360 teeth. The machine has an automatic return motion, and can be adjusted very

quickly.

Among the notable industries of Chicago Among the notable industries of Chicago may be mentioned the Chicago Scale Co., who are at present turning out from 300 to 400 scales per day. Among their specialties is the "Little Detective" scale, which will weigh anything from ¼ ounce up to 25 pounds, and is intended to supply the great demand for a housekeeper's scale at about one-third the cost of an ordinary scale used for that purpose. Their sales number over 100 coop.

the cost of an ordinary scale used for that purpose. Their sales number over 100,000 since they were first placed on the market. The Northwestern File Co., Chicago, who have taken the premises Nos. 65, 67 and 69 South Canal street, occupying 75x200 feet, for the manufacture of hand-cut files of all descriptions, report a large supply of orders on hand, and are forced to their utmost ca-

on hand, and are forced to their utmost ca-pacity, being some three months behind their orders.

Messrs. J. D. Simmonds & Co., 98 W. Lake street, Chicago, manufacturers of the simmonds sash supporter, report a very satisfactory trade being done and a constant increase of orders. They are at present turning out from two to five gross per diem. We have seen in their office a collection of over 80 different styles of supporters that have been replaced by the Simmonds sash supporter.

monds sash supporter.

The Northwestern Horse Nail Company, Chicago, will increase their works and put in new machinery this spring, on account of present facilities not being sufficient to do the amount of business they are constantly receiving. They are at present employing 150 hands, turning out from 4 to 5 tons per

day.
The Phœnix Iron Works, Chicago, are working to the fullest extent of their capacity, and propose increasing their works in order to fulfill the large number of orders they are receiving. They have just completed a contract for six steam pumps for the North Chicago Rolling Mills, and two for the new works of the Pullman Car Company at Pullman, and are just finishing a contract for a prominent firm in this State for nine pumps, with a capacity for pumping 1500 gallons per minute, the cylinders of which measure 20 inches in diameter.

Messrs. A. Kniseley & Co., Chicago, have on hand contracts as follows: Slating, tinon hand contracts as follows: Slating, tin-ning, galvanized iron and skylight work on the new depot of the P., Ft. W. & C., the C., M. & St. P., the C., A. & St. L. and the C., B. & Q. railway companies' new depots, on Canal street, this amounting in all to on Canal street, this amounting in all to about \$25,000; also tinning, galvanized iron and skylight work on the train shed for the Chicago and Northwestern Railway Com-pany, at their new depot. The skylight measures 20 x 350 feet, built under the Hayes patent. This contract amounts to \$12,000. They have also a contract for put-ting in place complete on the United States Hayes patent. This contract amounts to \$12,000. They have also a contract for puting in place, complete, on the United States Custom House, at Marshall, Tenn., some 37,500 square feet of the Kniseley patent iron lathing and framing.

### Underground Telegraph Lines,

The storm of Friday week practically suspended telegraphic communication in this city. The wires which were not down were, city. The wires which were not down were, with few exceptions, interrupted by fallen wires crossing them and thus breaking the "circuit." The effect upon business and traffic generally by the unexpected stoppage of this important agency of communication was so serious as to excite a general demand for a better means of conducting wires about the city. All the old arguments in favor of the sinking of the wires under the streets were revived and enwires under the streets were revived and enforced by application of the new illustrations furnished by the storm. The extravagance, the present system of wires suspended from pole to pole or roof to roof of houses, were urged against the construction of further lines on the same system. A gentleman largely interested in the active pole of the same system. destructiveness, as well as the unsightliness of the present system of wires suspended from largely interested in the active management of telegraph lines said that the use of poles and wires exposed to storms compelled con and wires exposed to storms compelled con-stant repair and watchfulness by a large force of men specially trained for the pe-culiar work, and resulted practically in the occasional rebuilding of the lines. Moreover, the wires thus exposed, in order to sustain their own weight and that of ice and snow, had to be made much larger than they would be if protected, and the needless est was something like half the expense If built in cables, each wire need not be more than the thickness of a needle or pin. If submerged in water or laid under ground, they could be made of any desirable thickness, a single cable combining scores of

separately acting wires.

A prominent official, who is connected

the present system. The wires when built across roofs are placed upon frames resting on roofs, and frequently leaks are thus started. In heavy storms the wires, swaying from side to side with the wind, strike the roof or chimneys, and are thus very destructive. The wires stretched in front of buildings greatly interfere with the operations of firemen and fires. With the natural increase of wires now going on these difficulties may prove insurmountable after a time. The danger of interruption of the communication by which all fire companies are now quickly informed of the location of a fire, is a serious matter.

Several schemes are already before the public for laying uederground lines, to

public public for laying uederground lines, to which, however, general attention has not been actively directed. The Edison Electric Light Company, which has a permit from the Common Council to light the lower part of the city with electric lights, has made an application for the privilege of laying the necessary wires underground. This has not yet been granted, and it is opposed for several reasons, the chief one being that it requires the tearing up of the entire length of each street to be supplied with lights, and, when repairs or additions are necessary, travel must be largely interrupted at the points at which work is going on. Another company, of which General W. F. Smith, of the Police Board, is a manager and directer, already has a permit to lay its wires under ground. This permit it is understood to have disposed of to the Western Union Company, but the latter has not availed itself of the right further than to lay a few pneumatic tubes. The applica-tions by these companies contemplate only the laying of an ordinary pipe, in which the wire will be laid. This system is in use in London, where its chief defect is found to be in the difficulty of making re-pairs and additions without obstructing travel

Still another and later scheme is Still another and later scheme is one patented in this country by John D. Townsend, the inventor, and in England by Charles L. Gore, of this city, who is owner of two-fifths. Mr. Gore is now in London, where it is proposed to introduce the system. It is patented here under the name of "A conductor for underground telegraph lines," and is a simple plan to make the curbstones of the sidewalks and the gutters of the streets available for the reception of the wires. It can be built in the gutters of the streets available for the reception of the wires. It can be built in sections of any length, each taking the form of a single step of an ordinary stairway, and the whole of a block of sections looking like and occupying the space of the curbing now in general use. The whole is made of cast iron, very heavy and strong, so as not to be injured by trucks backing against it or heavy articles falling upon it.

### Foreign Trade Marks and the 1883 Exhibition.

Ever since the Supreme Court of the United States declared the trade-mark law unconstitutional, the effect of the decision has been much misunderstood in foreign no ountries. The belief seems to have gained no little currency that the entire fabric of property in trade-marks has been swept away in this country, beyond the possibility of restoration. The latest phase of the matter is the report that certain foreign manufacturers will decline to send their products to the Fair of 1883, unless they shall be assured of protection for their trade-marks. It becomes important, therefore, to set forth the law on the subject as it really is.

The Supreme Court decided that Congress

The Supreme Court decided that Congress had no power to pass a general national trade-mark law, and that, consequently, the acts which had been passed for that purpose were void. With the failure of this system of protection the various trade-mark treaties lost their effect, because they were based on that system. But the Court did not deny, nor did it affirm, that Congress might pass a law to preserve these treaty right, or that, under the commerce clause of the constitution, it might legislate directly for the protion, it might legislate directly for the pro-tection of foreign trade-marks. Hence the decision is not a bar to Congressional action so far as foreign trade-marks are concerned. The decision has had and can have no ef-

passed for that purpose. That right still ex-ists in every part of the country, and is in no way impaired or touched by the judg-ment under consideration. By the common law the owner of a trade-mark may prevent its piracy by injunction and redress the wrong done by damages. These remedies are open equally to foreigner and citizen. Neither as to the right nor as to the remedy does the common law recognize any difference between a partial results. difference between a native and an alier difference between a native and an alien owner, or between a domestic and a foreign trade-mark. These principles have been repeatedly recognized in our courts. They were approved by the United States Supreme Court in the very case wherein the legislation of Congress was set aside.

It is true that common law remedies may not he affective as a tartivity. The former

It is true that common law remedies may not be so effective as statutory. The former are general and remedial; the latter may be made specific and penal. But forces

on Some Prominent Chicago with the Fire Department, spoke from observation of the dangers and dificulties of the present system. The wires when built tected by the common law, independently

last week in this city. Mr. Francis Forbes, who presided, said that the meeting was called for the purpose of giving expression to the feelings of those interested in the may be advisable in regard to a United States statute for the better protection of trade-marks. He stated that it is an admitted fact among manufacturers and mer-chants that an amended and better law is desirable, and declared that it can only be secured by united and earnest efforts. A defective codification of the State trademark laws is now before the Legislature, and it will pass unless some opposition is made. A resolution has also been introduced into Congress which concerns the owners of trade marks, being a proposition to abolish registration in the Patent Office. Mr. G. A. Laridon said the Belgian Consul had informed him that unless certain Belgian man-ufacturers were protected by a satisfactory trade-mark law they would not attempt to exhibit goods at the World's Fair of 1883, Mr. John Matthews complained that there was not in the proposed trade-mark laws any provision for the protection of show cards and other symbols not attached to the goods themselves. It was decided by the meeting that the publication of cuts of trademarks should be made by government in this country as in England.

Experiments with Pulverized Coal. The proprietor of one of our most successful steamship lines in the coastwise trade, volsteamship lines in the constwise trade, vol-unteered the remark to an Iron Age reporter that the company are now engaged in a very interesting experiment in the use of pulver-ized coal. He was not quite ready to speak definitely, but expressed confidence that they would succeed. Very favorable ar-rangements had been made with the owners of the patent, in consideration of giving this sort of fuel a fair trial, as some expense is necessary in preparing apparatus for prelimnecessary in preparing apparatus for preliminary tests before attempting anything on shipboard. Much enthusiasm is manifested shipboard. Much enthusiasm is manifested in the prospect of success, as the reduction in expense promises to be large, it being proposed to utilize the large quantities of coal dust, or culm, accumulating at the mines of the anthracite regions. The culm is ground to a dust and blown into the furnace. The grinding, it is thought, will be done or beard the steamer. The saving in done on board the steamer. The saving in fuel, in case of success, would, in some in-stances, double the profits of a voyage, especially if the saving in cargo space growing out of a change from merchantable coal is taken into the calculation. The culm is first lighted with wood, and then yields a strong heat, leaving only a small residuum of

Thaddeus Lyman died at Newark last week at the age of 93 years. He went to Newark from Connecticut in early life, and 50 years ago had one of the largest silverplating establishments in the country. In the hard times of 1838 he failed, but subsequently rallied and built a large factory on Lawrence street. For several years he lived at Roseville. at Roseville.

The Union Iron and Steel Company, of Chicago, report their output in 1880, as follows: Steel Rails, 42,629 gross tons; Steel Ingots, 55,045. Their best work is given by them as under: Best month, November, 5683 tons of rails; best month, November, tons of ingots; best week first in November, 7987 tons of ingots; best week, first in November, 1484 tons of rails; best week, third in December, 1965 tons of ingots.

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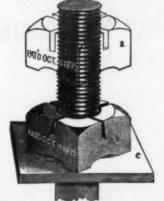
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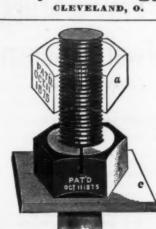
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Ing the slots, and grasping the bolt.

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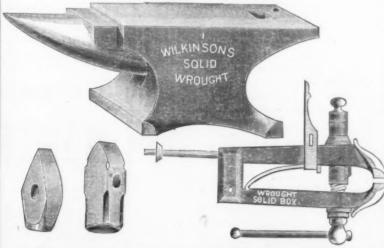
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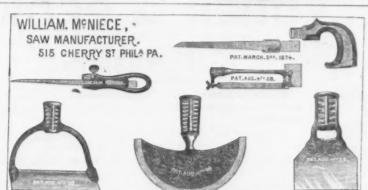
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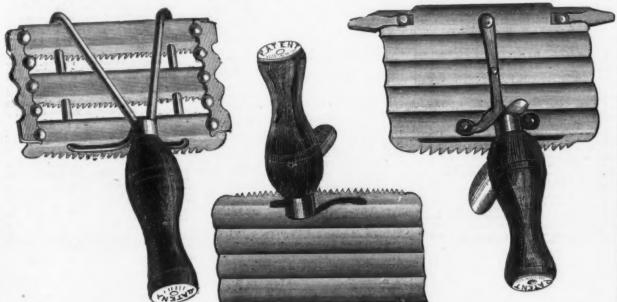
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Adze Eye & Bell Faced Nail Hammers, Machinists' & Blacksmiths' Hammers.

The attention of the trade is called to this line of goods as superior in style, quality and workmanship to any in market.

Hartford, Conn., U. S. A.



Of Every Description, Nos. 17 & 19 Green St., Albany, N. Y., Dec. 8, 1880.

To All Whom it May Concern: To-day a decree in my suit against G. T. Fisher & Co , of Detroit, for an infringement of my patent, was made and entered, of which the following is an extract

At a session of the Circuit Court of the United States for the Eastern District of Michigan, held at Detroits, c. on Wednesday, the 5th day of December, 188c.

\*\*Present, Hon. H. B. Brown, District Judge.\*\*

\*\*NELSON LYON\*\*

GUYON T. FISHER, et al. \( \)

It is ordered, adjudged and decreed, that the act entitled "An act for the relief of Nelson Lyon and Jeromiah S. James," passed by Congress and approved April 1, 1856, &c., is a good, valid and constitutional act.

That the original patent, bearing date July 9, 1872, and numbered 138.&3; granted and issued to Joseph Barsaloux, Jeremiah S. James and Nelson Lyon, when corrected by the Acting Commissioner of Patents, as directed by said act, was a good and valid patent.

That the original patent, was a good and valid patent.

That the patent is mentioned and overlined and first inventor of the improvements in metallic stiffeners fur boot and specific and the patents of the said letters patent.

That the Relasued Letter mentioned and specific and first inventor of the improvements in metallic heal stiffeners for boots and shoes, originally patented as afforesaid, in a good and valid patent; that said Lyon is exclusively possessed of said Letters Fatent and the invention thereby secured. That the defendants, G. T. Fisher & Co., and each of them, have infringed upon the said patents and upon the exclusive rights of said Lyon under the same.

That said Lyon receive of said defendants all the profits, &c., they have made, and in addition thereto all the damage he has suffered by reason of the infringements by the defendants, and also the costs, charges and disbursements in the action.

It is also further ordered, adjudged and decreed, that a perpetual injunction be issued against said defendants, according to the prayer of the said complainant's bill.

You are also hereby notified that the perpetual injunction has been issued and served on the defendants.

All questions as to damages and settlements in relation to infringements under my patents must be addressed to and made with my attorney, WILLIAM H. KING, in my care, at the above address.

NELSON LYON.

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We make Seven Sizes of Roller Mowers and Six Sizes of Side-Wheel

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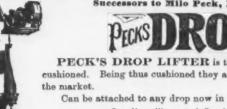
We have received many first premiums in competitive trials with other Mowers, both in this country and acroad. We have special patterns of Mowers for export, meeting the requirements of every market. Our new Horse Mower is conceded to be the Lightest and Best Horse Lawn Mower ever made. N. B.—Horse and Hand Lawn Mowers are alike guaranteed in all respects. Send for Illustrated Catalogue. Address

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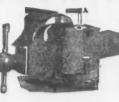


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Manufacturers of Carriage Hardware,
West Meriden, Conn., August 26th, 1879.
N. C. Stiles, Treas.—Dear Sir: We are much pleased with the Drop bought of you two years ago. We consider it up to the times, and about as far ahead of some makes as railroads are ahead of stage coaches.

Please hurry forward the 1000 lb. Drop ordered a few days ago. Yours respectfully,
D. H. SOUTHWICK, Sec'y.

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Water Driven to any Hight and Distance by Compressed Air.

Country Houses Supplied Cheaply and Certainly for Bath Rooms, Water Closets, Hot and Cold Water Faucets, &c.

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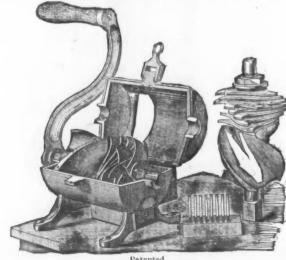
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Are offered as a first-class cutter. The Knives are made from **Best Cast Steel**. The Circular Knives revolve between a Comb of Permanent Knives of same gauge, making a **Double Shearing Cut**, cutting faster and finer than any machine made. The arrangement of the Knives expels all meats as cut. Is an excellent Spice Mill. Also, Manufacturers of

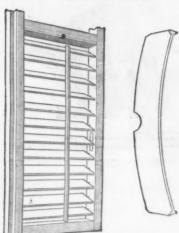
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Patented.

### SUPERIOR TO ALL OTHERS.



For tightening the Slats of Window Blinds and holding them at any required

The sunlight is let in or shut out at will. The blinds are made a much better protection from cold, because when the slats are shut they are so kept by the Holder and cannot be moved by the action of the wind. Noisy rattling of the slats is prevented.

The holder is securely held by its spring and the sharp points at each end. As it is made of brass it will not rust.

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It requires no screws or nails to fasten it to the blind. Any one can apply it. It cannot get loose or deface the blind as

Retail Price, 5 cents each; 50 cents per dozen; At which price samples will be mailed postpaid.

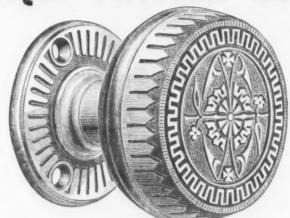
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### TO NICKEL PLATERS.

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in any quantity.

These superior Anodes wear away in the solution evenly and completely, like rolled silver or copper plates, thus avoiding the vexation and loss caused by the crumbling and breaking of cast Anodes. They plate very evenly and regularly.

Though necessarily higher in price per pound, they are so much thinner (usual thickness 3-32 inch) that to furnish a tank of any given size costs but about half as much as if furnished with cast Anodes.

Anodes.

Though perfectly protected by my patent for Malleable or Rolled Nickel Anodes of Jan. 6, 1880, as well as by Dr. Flei mann's patent for making nickel malleable (of which I am sole and exclusive American licensee),

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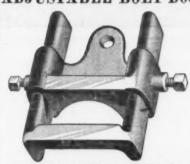
INFRINGEMENTS.

We call attention to infringements of the Weston Machine, in which Automatic Switches are used to prevent change of current. The Weston Co. are owners by grant or purchase of all forms of Automatic Switches for Platting Machines. The adoption of these machines will certainly lead to great loss to parties purchasing or using them.

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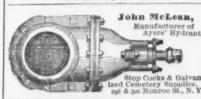




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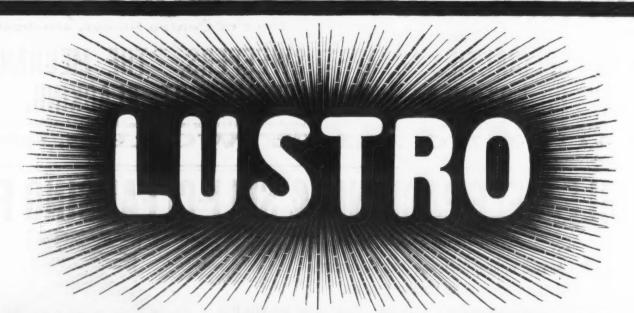
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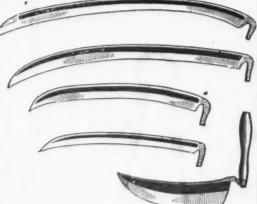
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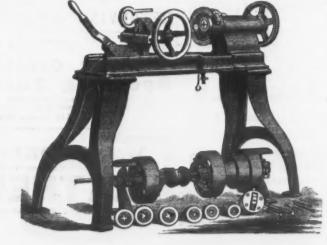
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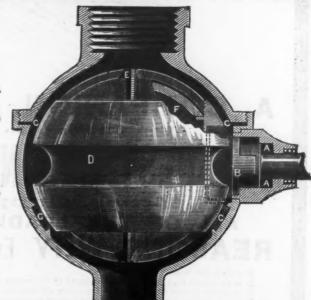
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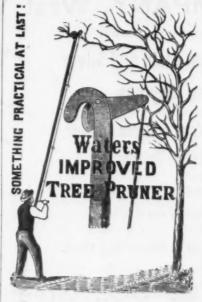
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Bridgeport Brass Co., Bridgeport Conn. 2 Brown & Bros., St Chambers, N. Y. 3 Davol John & Sons, 100 John, N. Y. 2 Davol John & Sons, 100 John, N. Y. 2	
Coleman Earlie Bott works, Finisher Pass.  Bracket Woods, Rayner J., I: Cannon, N. Y.  Dytegrove W. E., foot East 10th St., N. Y.  St.  Brass, Manufacturers of. Ansonia Brass and Copper Co., 19 Cliff, N. Y.  2 Bridgeport Brass Co., Bridgeport Conn.  2 Brown & Bros. 8; Chambers, N. Y.  2 Davol John & Bros. 8; Chambers, N. Y.  2 Holmos, Booth & Haydens, 49 Chambers, N. Y.  22 Morchant & Co., 18t ave. & 27th 8t., N. Y.  2 Morchant & Co., 18th ave. & 27th 8t., N. Y.  2 Morchant & Co., 18th ave. & 18th 18th 18th 18th 18th 18th 18th 18th	
Scovili Mfg. Co., 421 Broome, N. Y 2	
Brass Founders. Philada Smelting Co., 12th and Noble, Phila	
Waterbury Brass Co., 200 Broadway, N. Y.  Brass Feunders. Philads Smeiting Co., 12th and Noble, Phila	
Moseley fron Bridge and roof Co., 5, 597, N. 1	
Wilson Johr. Sheffield, England	
New England Butt Co., 20 Platt, N. Y 39 Sabin Mfg, Co., Montpeller, Vt. 28 Stanley Works, New Britain, Conn. 32	
Union Mig. Co., 90 Chambers, N. 1 Oarriage Boits. hakers q. Sheiton & Co., Birmingham, Ct. Townsand, Wilson & Hubbard, Philadelphia, 45	
Wilson Johr. Sheffield. England.  Butts and Hinges. American Solval Spring Butt Co., & Beekman, N. Y. 48 New England Butt Co., & Platt, N. Y	
Dexter Spring Co., Huitou ra	
Car Axles. Roberts A. & P. & Co., 265 S. 4th, Philadelphia § Casters. Phoenix Caster Co., Indianapolis, Ind	
Roberts A. & P. & Co., 395, 4th, Philadelphia. 5 Castings, Pren. 16 Castings, Iren. 16 Castings, Iren. 16 Castings, Pren. 17 Elwell Hardware Co., Bridgeport, Conn. 48 Hopson & Brainard, Wethersheld, Conn. 7 North Bros., Philadelphia. Pa. 6 Castings, Steel. Manufacturers of. Chester Steel Castings Co., 497 Library, Phila., Pa 43 Eureka Cast Steel Co., Chester, Pa. 48 Flags Stanley G. & Co., Philadelphia. 48 Pittaburgh Steel Casting Co., 97 litsburgh, Pa. 48 Castising Irens. 48 Casting Irens. 48	ı
North Bros., Philadelphia. Pa	
Flag Stanley G. & Co., Philadelphia	
Carver John, 44 North 3d St., Brooklyn, E. D., N. Y. Chains, Manayacturers of Bradlee & Co., 4th Richmond St., Phila., Pa	
Chains, Sash. Morton Thomas, 6c Elizabeth, N. Y	
Konnu David, Coresan, Sach, N. Y. Chaines, Sash. Morton Thomas, 6c Elizabeth, N. Y. Obiseis, Manufacturers of. Buck Bros. Milbury. Mass. 7 Clutches, F. Clncinnati, O. Oster Bury. Concinnati, O. Oster Harlings, &Cc. Cary & Moen, 24 W. 25th, N. Y. Dunbar Bros. Bristol. Conn. 42 Ocal, Miners of. 43	
Clock Springs, &Co. Cary & Moen, 24 W. 29th, N. Y	
Pardee A. & Co., III Broad way, N. Y	
Ceal Hods. Grimths Geo., Phita. Pa	
Coke. Wister Francis, 230 S. Third, Phila. 5	
Ceke. Wister Francis. 230 S. Third, Phila.  Compasses and Dividers. Manufacturers of.  Bomis & Tool Co. Springfield, Mass. 34&40  Stevens J. & Co., Chicopee Falls, Mass. 34  Copper. Markot & Phila.	
Pope, Cole & Co., Baltimore, Md	
Oern Huskers. Chambers. Bering & Quinlan Decatur, Ili	
Godard Cures, Almanes, C. Corrugated Irens. Moseler Iron Bridge and Roof Co., 5 Dey. N. Y 6 Corners for Oli Cloths. Hubbell R., Northville, N. Y 44 Cotters and Cetter Keys. Browning, Sisum & Co., 85 Chambers, N. Y 27	
Conternand Cotter Roys. Browning. Sisum & Co., 85 Chambers, N. Y	
Countersink. Barber D. F., 121 Washington, Boston	
Crucibles. ) Seldel R. B., Philadelphia, Pa	
Curry Combs Lawrence Curry Comb Co., 309 East 22d, N. Y30 Cutlery, Importers of.	
Cauterly Moorters of.  Boker Hermann & Co., to: Duane, N. Y	
Outlery, Manufacturers of. Burkinshaw Aaron, Pepperell, Mass	
Greenfield fool Co., Greenfield, Mass	
Friedmann & Lauterware of Burkinnhaw Aaron, Pepperell, Mass. 16 Conway T. C., oo Chambers, N. Y. Furness, Bannister & Co., Newark, N. J. 76 Greenfield fool Co., Greenfield, Mass. 16 John Russell Cutlery C., Chambers, N. Y. 48 Metiden Cutlery Co., Chambers, N. Y. 47 The Lamson & Goodnow Mfg. Co., 88 Chambers, N. Y. 48 N. Y. 48 N. Y. 46	
De-oxydized Bronze Metals. Phila Smelting Co., 12th and Noble Sts, Phila,9	
N. Y.  De-oxydized Bronze Metals. Phila Smelting Co., 12th and Noble Sts., Phila,	
Haight Jos., Portonesser, 3.	
Bartlett Frederick, Freeport, Ills	
Door Bolts.  Ives Hobart B., New Haven, Ct	
Sellers Wm. & Co., Phila. and 79 Liderty st., N.Y. 47 Taft Geo. C., Worcester, Mass	
Robuck S. & Co., 164 Fulton, N. Y. Van Wagoner & Williams, 82 Beekman, N. Y.  Boor Bolts. Ives Hobart B., New Haven, Ct.  155 Drilling Hachines, Makers of, Folger A. E. & Co., Springfield, Sellers Wm. & Co., Phila, and 79 Liderty st., N. Y. 174f. Geo. C., Worcester, Mass. Thorne, De Haven & Co., Philadelphia. Wiley & Russeli Mig. Co., Greenfield, Mass.  33 Drop Forgings.  Merrill C. & Sons, 556 Grand, N. Y.  48	1

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Edge Teels. Makers of.         36           Doscher M & Chambers. N. Y	RRR
Stokes & Parrish. Philadelphia	ST
Stokes & Parrian Finadelphia.  Selevator Buckets.  Rowland T. F., Brooklyn, N. Y.  Smerr and Emery Wheels.  Ashland Emery Co., Perth Amboy, N. J.  Irvine A. A. & Co., 14 Murray, N. Y.  Lehigh Valley Emery Wheel Co., Weissport, Pa. 43  Buglares, tias.  Schleicher, Schumm & Co., Philadelphia.  47  Rugines (Locemeriye).	Ire
Brgines, tins. Schleicher, Schumm & Co., Philadelphia	BE
Schleicher, Schumm & Co., Philadelphia.  Righnes (Locemetive).  Baldwin Locomotive Works, Philadelphia, Pa. 6  Barlines, Steams, Makers of.  Davis A. J. & Co., Newark, N. J.  Lane & Bodiey Co., Cincinnati, O. 46  Tyson Engine Co., Philadelphia.  The Norwalk Iron Works Co., S. Norwalk, Conn. 45  Wetherlii Robe, & Co., Chester, Pa.,  Wetherlii Robe, & Co., Chester, Pa.,  Wetherlii Robe, & Co., Chester, Pa.,  Wetherlii Robe, & Co., S. Norwalk, Conn. 45  Faucetas, Self-Meassaring, Makers of.  Enterprise Mfg. Co., of Pa., Phila, and N. Y. 35  Lane Bros., Millbrook, N. K.	G
Lane & Bodley Co., Cincinnati, O	L
Wetherlil Robt. & Co., Chester, Pa.,	IN
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Spencer J. R. & Son. Sheffield, England	L
Jewett John C. & Sons, Buffalo, N. Y39	7
Conway T. G., oo Chambers, N. Y	H
Field Alfred & Co., 93 Chambers, N. Y. 15 Hartley & Graham. 17 Maiden Lane, N. Y. 12 Fire Brick. Makers of. Borgner & O'Brien, Philadelphia, Pa. 42 Brooklyn Clay Retort and Fire Brick Works, Van Dyke Sk., Brooklyn, N. Y. 42 Gardner Brothers, Pittsburgh, Pa. 42 Hali & Sons, Burfelo, N. Y. 42 Justice Philio S., Philadelphia, Pa. 42 Kreiscaer B. & Sons, Foot of E. Houston St., 42 Maurer Henry, 216 East 22d, N. Y. 43 Maurer Henry, 216 East 22d, N. Y. 43 Costrander Janes & Son, Troy, N. Y. 42 Perth Ambov Terra Cotta Co., Perth Amboy, N. J., 42 Valentine M. D. & Bro., Woodbridge, N. J. 43 Valentine M. D. & Bro., Woodbridge, N. J. 43 Filint and Kmery Paper and Clotts, Baeder, Adamson & Co., 73 Market, Phila Brorges, Portable & Cc. Huffalo Forge Co., Buffalo, N. Y. 48 Cooke William, & Cortlandt, N. Y. 47 Empire Portable Forge Co., Cohoes, N. Y. 47 Holt Mig Co., Cleveland, O. 47 Repsender Portable Forge Co., 208 Carter, Phil. 45 Eccles Hichard, Aubarn, N. Y. 49 Rose Wm., & Bros., West Philadelphia, Pa 6 Foundry Facings, Paxson J. W. & Co., 514 Beech, Phila 5 Fy Pans. N. Y. Stamping Co., 311 Avenue A, N. Y. 39 N. Y. Stamping Co., 311 Avenue A, N. Y. 39 N. Y. Stamping Co., 311 Avenue A, N. Y. 39	S. F.
Gardner Brothers, Pittsburgh, Pa	7
Kreischer B. & Sons, foot of E. Houston St	le l
Ostrander James & Son, 170y, N. Y. 42 Perth Ambov Terra Cotta Co., Perth Amboy, N. J., 42 Valentine M. D. & Bro, Woodbridge, N. J., 42 Watson Fire Brick Co., Perth Amboy, N. J.	I
Flint and Emery Paper and Cloth. Baeder, Adamson & Co., 730 Market, Phila Forges, Portable, &c.	Ir
Buffalo Forge Co., Buffalo, N. Y	1752
Holt Mfg. Co., Cleveland, O. 45 Keystone Portable Forge Co., 218 Carter, Phil. 47 Forgings, Iron and Steel.	Ir L
Rose Wm. & Bros., West Philadelphia, Pa	Li
Whitehead Bros., 517 W. 15th, N. Y 3 Fry Pans. N. Y. Stamping Co., 311 Avenue A, N. Y	L
Richmond & Potts, 119 S. 4th, Phila., Pa	Li
Furnace Hoists.  Stokes & Parrish. Philada., Pa	Li
Carv & Moen. 234 W. 39th. N. Y	Li
Grass Co., Durhamville, N. Y	1
Creswell David S., Philadelphia, Pa	1
Grindstones Co., Newcastle-on-Tyne, Eng 44 Grindstones Co., Newcastle-on-Tyne, Eng 40 Lombari & Co., Boston, Mass 40 Wood H. & & Co., 32 West, N. Y 40 Wood Walter R., 30, and 26, Front, N. Y 40	M
Trailed & Character of	1
Hartford Hammer Co., Hartford, Ct	1
Anceland F. Dulpont Co. 20 Murray, N. Y. 35 Hammers. Hactford Hammer Co., Hartford, Ct. 30 Hundles. Spokes &c. Hundles. Spokes &c. Hundles Hart Best. Hundles Hart Best. Kidder Side Door Hanger Co., Romeo, Mich. 37 Roore S. H. & Y. Chicaso, H	1
Hardware Commission Merchants. Field Alfred & Co., 93 Chambers, N. Y.,	200
Graham & Haines, 113 Chambers, N. Y 8 Heaton & Denckla, 507 Commerce, Phisa 27 Hymes David & Co., 52 Church, N. Y 27	3
Hardware Dealers. Lioyd, Supplee & Waiton. 625 Market, Phila27 Shepard Sidney & Co., Buffalo N. Y	M
Boker Hermann & Co., for Duane, N. Y	M
Hardware Manufacturers. Cowles Hardware Co., Unionville, Conn	
McCoy & Co. 134 and 136 Duane, N. Y. 16  Hardware Manufacturers. Cowles Hardware Co. Unionville, Comm. 43 Enterprise Mfg. Co., Phila. 39 Enterprise Mfg. Co., Contend Co., Company Co., Co., Company Compa	i
Globe Hardware Co., 53 Beekman, N. Y. 20 Lloyd, Supplee at Waiton, 225 Market St., Phila., Fa.27 Miller's rails Co., 74 Chambers, N. Y. 20 Pussell & Everin Mr. Co. 45 Chambers, N. Y. 20	
Shannou J. B. & Sons, Philadelphia, Pa. 6 Shepard Hardware Co., Buffalo, N. Y Stanley Works, New Britain, Conn. 22	M
Tiebout W. & J., 31 Chambers, N. Y Trenton Lock & Hardware Co, Trenton, N. J. 21 Union Mfs. Co., 92 Chambers, N. Y	M
Van Wagoner & Williams, & Beekman, N. Y	M
Davis Wm. L. Chelsea, Mass	M
Spencer & Underhill, 04 Chambers, N. Y	
Harness Snaps. Covert Mfg. Co. West Troy, N. Y	1
Kimperiin R P & Co. Indianapolis Ind	1
Hay Kulves. Co., East Wilton, Me. 21 Holt Hiram & Co., East Wilton, Me. 21 Heel Stiffeners. Lyon Nelson, Albany, N. Y. 30 Hinges.	M
Lyon Nelson, Albany, N. Y.  #Hinges. Cowles Hdw. Co., Unionville, Ct. 43 Scovill Mfg. Co., 419 Broome, N. Y. 2  #Hanloy Works, New British Conn. 32  #Hanloy Works, New British Conn. 32 Chambers, Bering & Quinlan, Decatur, Ill. 22  #Heisting Engines, Makers of, Crane Bros. Mfg. Co., Chicago, Ill. 46 The Norwalk Iron Works Co., S. Norwalk, Conn. 45  Holsting Machines.	M
Chambers, Bering & Quinlan, Decatur, Ill. 20 Helsting Engines, Makers of. Crane Bros., MR. Co., Chicago, Ill. 46	M
The Norwalk Iron Works Co., S. Norwalk, Conn45 Hoisting Machines. Box Alfred & Co., 312 Green, Phila	M
Dunn J. Cleveland, O	1
Stokes & Parriah, Philada., Pa	M
Soker Hermann & Co 101 & 102 Duane, N. Y. 36&43 Shannon J. J., Philadelphia, Pa	N
Waldron John, Muncy, Pa	1
Bridgewater Iron Co., Bridgewater, Mass. 21 FP Natl Co., Cleveland, O	N
Horse Shoes, Makers qt. Burden Iron Works, Troy, N. Y	N
The Norwalk Iron Works Co., S. Norwalk, Conn., 45 Hoisting Machines. Box Alfred & Co., 312 Green, Phila.  47 Dunn J., Cleveland, O., 46 Harrington Edwin & Son, Philadelphia, Pa., 47 Sellers Wm. & Co., Phila, and 19 Liberty st., N. Y., 47 Sellers Wm. & Co., Phila, and 19 Liberty st., N. Y., 47 Hocks Co., 19 Linda, Ps., 48 Hocks Co., 19 Linda, Ps., 48 Horse Clippers.  Boker Hermanp & Co., 10 & 102 Duane, N. Y., 55843 Shannon J. J., Philadelphia, Pa., 29 Horse Hay Forks.  Waldron John, Muncy, Pa., 48 Horse Nails, Makers of, 48 Horse Nails, Makers of, 48 Horse Nails, Makers of, 48 Horse Nails, Co., Cleveland, O., 55 National Horse Nail Co., Vergennes, VI., 27 Horse Shees, Makers of, 48 Horse Shees, Makers of, 49 Horse Shees, 49 Horse Shoe Co., Philadelphia, Pa., 5 Hode Bland Horse Shoe Co., Philadelphia, Pa., 5 Hode Bland Horse Shoe Co., Philadelphia, Pa., 5 Hode Bland Horse Shoe Co., Prividence, B., 27 Schoenberger & Co., Pittsburgh, Pa., 40 Hor Blant Stoves, 40	N
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McLean John, 300 Monroe, N. Y	1
Roebuck S. & Co., 164 Fulton, N. Y	0
Insurance, Boller. Hartford Steam Boller Inspection & Insurance Co47 Insurance, Life, The Travelers' Life and Accident Insurance Co., Hartford Comp.	0
The Travelers' Life and Accident Insurance Co., Hartford, Conn	0
Hoffman J. W. & Co., 205 S. 4th, Phila	O
Albany & Rensselaer Iron & Steet Co., Troy, N. Y. 40 Allentown Rolling Mill Co., Allentown, Pa	Pi
Levis Henry & Co., Philadeiphia, Pa. 5 Lundell Chas. G. (Swediah), Boston, Mass. 4 Iron. Manufacturers of. Albany & Rensselaer Iron & Steet Co., Troy, N. Y. 40 Allentown Rolling Mill Co., Allentown, Pa. 5 Britton Iron and Steet Co., Cleveland, ohio. 6 Burden Iron Works, Troy, N. Y. Coleman Rolling Mill Co., Louisville, Ky. 11 Elba Iron and Bolt Co., Limited, Pittsburgh, Pa. 11 Jenkins, Schreyer & Co., Williamsport, Pa. 6 Kirspastrick & Co., Pittsburgh, Pa. 4 Kloman Andrew, Pittsburgh, Pa. 4 Lang W. Bailey, 50 Beekman, N. Y. 4 Leonard John, 450 West St., N. Y.	Pa
Jenkins, Schreyer & Co., Williamsport, Pa	P
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1	Roane	Iron Co Merchai	., Ch	attan	ooga,	Tenn.	Y ave., his		6 F
5	Rowla Rowla Shoen	nd Jam nd Wm berger 8	es & & H	Co., of arvey Pitts	o N. I Phil burgh	Delawi ladelpl	hia	Phila.	5 E
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,	Wood Zug &	Alan & Co. Pit	Co.,	Arch,	Phila	delph	is		4
,	Boynte Etting	rokera on Geo. Edward	A., 70	Wall	N. Y	ia, Pa.	*********	******	6
5	Gerry Gallau	Drumm Allston det P.	& Co	68 W	all, N Vall, all, N	Y N. Y	*********	2	8. 1
5	Hatry lron, C	A. G., P	ittsb	arm	Pa	d Blas	7.	******	4 P
5	Lunde	ll Chas.	Q. (8	wedi Will	sh), B iam.	oston, N. Y	Mass,		4 P
5	Bailey	J. F. &	Co.,	93 CB	ll, N.	Y rs, N.	Ÿ		5 P
9 2	Lunde Mohr J	ll Chas.	G., Wal	Bostonut, F	n. Ma hilad	ss elphia	r. Mass. Y		5 P
5	Wister Pron De	rdson J. r L. & R ealers.	O., 2	Waln	ut P	hilade hila	lphia	*****	5 P
0	Abeel Adams Bonne	Brother Hugh II. Botai	8, 190 W., 6	Sout 6 Pine	h N. e. N. T	Y	n ()	******	4 P
8	Border Carmi Carter	chael &	Emr	nens,	71 We	est, N	Y. Cedar. N.	¥	4 1
8 2 8	Coone	y Danie	red,	88 Wa Phila	shin	rton, ? ia, Pa.	V. Y		4 5
8	Fullar Harris	on Bros ton J. F on & Gi	Be	o., 160 nnett 1. 558 t	Build o 562	n, N. Y ling, N Water	Y	*******	4
8	Judso: Kane	an J. W n B. F., C., Pitts	.& C	0., 20l nd 459 h. Pa	S. Fo	ourth, er, N.	Mass. Mass. Mass. Mass. Mass. My	phia	4 F
5	Lissbe Lundb Lunde	rger S. erg Gu Il Chas.	A., 52 staf,	38 Kil	th, N	Y	Mass.		E
8	Mathe	son & G	S., 5	32 W	albro	ok, Lo	ndon, Er	g2	4
6	Ogden Page,	& Wall	ace, & Co	85, 87, Bos	89 and	d 91 El	m, N. Y.		4 6
3	Pullm	n & Co., an J. W y John !	esle; W., o	roady , Phi Will	ray. N ladel iam, l	ohia, P	g	******	4 E
2	Richa: Walla stree	rds D. V ce Wm.	H.	Co., 92 & Co.	Man. Alb	gin, N any an	d Wash	Ington	4
2 2 2	Warns	mson J	& So ames	n, 28 a	ind 29	West, Vall, N	N. Y	******	4
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3	Wheel Willia	er E. S. mson J	& Camer	0. 54 Co	., 60 V	N. Y Vall, N	. ¥	******	6 1
8	Hoope Leffer Moorb	ts Mars	Ty. S	47 W. & Co.	15th 8	st., N.	Y n, N. Y		6 4
7 5	Summ	ers Joh	n &	Sons,	Stalyi Stalyi	ra bridge h. ra	Englan	d	4 1
7	Howa Lamps	table rd& Mo , Furn	Fixi	45 Ful	ton, 1	N. Y	******		2
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3	Howa Miller	Edw'd	rse. & Co	45 Ful	ton, l	n, N. Y	*********		2 1
9	Coles	H. H. &	Co.,	Phila	delph	ia, Pa			13 8
6	Lloyd	Supple	e &	Walto	n. Ph	iladelj	phia, Pa.	Y	17 5
7	Locks	and K	96	Cham	bers,	N. Y.	of	3	39
3	Bohan lyn, Branf	E. D	lson k W	Bron	dway	and A	cossuth,	Breok	27 8
3	Durri	e & McC	arty	or Cl Brad	lev, 8	ers, N. 7 Char	Y. nbers, N.	Υ	9
4	Mallo	y, Whe	eler	& Co.	New N. J.	Have	n. Conn.		64 37 45 8
0	Yale I Machi	ock Mf	E. Co	. Co., ., §3 C	hami	eport, bers, N	Conn	******	3
6	Box A	lfred &	Co	167 Pl 312 Gr	reen, l	th, Bro	Conn Conn Conn Conn Conn Y Conn Conn Y Coklyn		46
15	Forsa Garvi Johns	th S. C.	& Co	0., Ma . 130 (	nches	ter, Ne, N. Y	H. Pa ladelphi		46 47
12	L. B. I	Plander rove &	Ma Co.,	chine	Work	ks, Phila, Pa.	ladelphi	a. Pa.	40 20 23
7	Mona Oram	wk & H	ddso rton.	n Mfg	Co., cland	Water	ford. N.	Ý	16 37 46
6	Pittab Seller Stoke	urgh M s Wm. &	fg. C k Co. rish.	o., Pit Phil	tabur a. and	gh. Pa 179 Li	ford. N. berty st.	N. Y.	46 47
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366	Machi Blaisd Brook	nists' lell P. &	Co.,	Word	ester	. Mass.	elphia P		45
13	Bullar	Wm.,	Cor	Dey, N	N. Y			30 32	32 47
9 9	Harri ave.	ngton I	elph	Son, ia Pa	15th	st. and	Thambers Pennsy Y Y Derty st. leveland	Ivania	47
7	King . Marce	J. M. &	Co	Wate Co., 9	riord Libe	N. Y	. Y		6 20
706	Seller Stock Mailet N. Y.	wall Sci	rew a	k Mac	hine	1 79 Ld Co., Cl	berty st., leveland,	N. Y	46
3	Penfie	ald Bloc	and k W	Malle orks,	t Wor Locks	ks, 456 port, N	E. Hous	ton	33
7	Meat (	Geo. M.	& Co.	353 C	Hasso	n Ave.	Brookly	n, N.Y.	16
7	Murra Metal	v Iron Polisi	Wor	ks. Bu	rling	ton. 10	wa		16
7	Metali	son. V	an D	, 1104 .	t Co	may,	as Cliff.	N. V.	33
3	Naylo Naylo	mith Me	99 J	t Son	Char V. Y.	leston	& Fulto	*******	40
8	Phelp	hor Br	e & C	o., Cl	iff, be	t. John	& Fulto Limite	n, N. Y. d, 2038	2 1
13	Purve	s A. & S y J. W.	on, 6	or. Se	outh a	nd Pe Y	& Fulto Limite nn, Phili Phila	<b>.</b>	5 1
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90	Metal Harri Metali	ngton & urgist	Ogl	esby,	Chica	go, III.			1
3 2 2	Booth Britte Mills,	n J. Bio Portab	dget	Blair, it, 330	Waln	ut, Ph	hiladelp liadelphi	hia	37
01	North	Carolin Lamps rd Bro	na M	III Sto	ne Co	, Wes	tminster	, Md	20
5	Miner	Can	dles.	. Mak	ers of	Pan b	lin, N. Y		
767	E. Ste	bbins .	Mfo.	Co.,	Brigh	ntwood	1 P. O.,	Spring	
70	Moldin	all Shov	d.	0., Ba	timo	re, Md.	********		33
3	Mouse Dietz	Trap R. E., 54 Claudit Mig. C	and	c6 Ful	ton, l	N. Y	******		48
3 9	Ripley Naise.	Mtg. O	o., U	nionv	ille, C	onn			28
7	Fuller Oxfor Rowle	d Iron ( and Jas.	Co. 8	Was	shing N. D	wich, l ton, N. biawa	Yre, Ave.,	Phila.	4 4 5
6 73	Schoel Zug & Nati N	co., Pit Co., Pit Inchin	tabu	rgh. I	tsbur a	gh, Pa	********		4
- 1	Pittab Nickei Condi	Pinte	fg. C	o., P	ittsbu	irgh, P	N. Y. Y. re, Ave.,	J	66
1 7 5 7	Potts Whar	Jos. H.,	Phil	adelp Phila	hia, I	ia, Pa.	h st., N.  i. Philade own, Pa. i. Mass.	v	38
4	Nerwa	y Sha	99 J	Rolle	rs of.	n l-4	De la	********	40
2	Nuts.	Bolts,	etc.	Mak Mill	co.	Allent	own, Pa	eiphia.	5
7	Haske	ll W. H.	& C	o Pa	wtuck d. Po	ngfield ket, R. rt Che	own, ra. l. Mass. I ster, N. Y		26 45 48
8 8	Standa Sternit	orgh J.	Co.,	Pitts	burgh ng, Pi	, Pa			45 48
7	Belmo	ntyle C	il Co	Para	Front fine	Co., Cl	eveland,	0	46 4
1	Geo. C	hase, 10	7th a	nd H	arlem	River	N.Y		40 -
5	Jacks Pullm Read	on Iron an J. W D. W R	Co	Cleve 7, 407	Wain	ut Phi	iadelphi	phia	5
554	Ornam Phila. Ox She	ental   Smeltir	ron ig Co	and o., 13th	Bran	Noble	iadelphi Philadel Sts. Phil	ā	19
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6	Patter	Dyer a	Will ers i	ber, C	level	and, O	ton. D. C	3	3
4	Pens, 1	Steel.	nol 1	oon C	a Mr.	on West		* * * * * * *	7

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Picks, Makers of. Pierson & Co., 24 Broadway, N. Y.	8
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Pancoast & Maule, 227 Pear Philadelphia	
McNeal A. H., Burlington, N. J.  McNeal A. H., Burlington, N. J.  Mellert Foundry and Machine Co. Limited, Read.	-
mellert Foundry and Machine Co., Limited, Read- ing, Pa. Reading Iron Works, Philadelphia, Pa., 44 Wood R. D. & Co., 400 Chestnut, Philadelphia	
Wood R. D. & Co., 400 Chestnut, Philadelphia	
Pinne Irons. Manufacturers of. Buck Bros., Millbury, Mass	
Greenfield Tool Co., Greenfield, Mass. 19 Planes. M. Tanujachurers aj. Greenfield Tool Co., Greenfield, Mass. 31 Lafiln Mfg Co., Westfield, Mass. 32 Stanley Rule and Level Co., 29 Chambers, N. Y. Plated Ware. Hall. Etton & Co., 7c Chambers, N. Y. 12 The Wm. Rocers Mfg. Co. Hartford, Ct. 12 Plumbers' Materials, Manujachurers aj. Sverhart Jas. M. Scranton Pa. 48 Pocket Knives. 3684 Boker Hermann & Co., 101 Duane, N. Y. 3684	
Laffin Mfg Co., Westfield Mass	1
Hall Elton & Co., 75 Chambers, N. V.	
The Wm. Rogers Mfg. Co., Hartford. Ct	
Evernart Jas. M., Scranton Pa	1
rocket Knives.  Boker Hermann & Co 101 Duane, N. Y	
Purvis R. C., Philadelphia	
Bradley & Co. Syracuse, N. Y.	
Presses, Fruit and Vegetable.  Mohawk & Hudson Mfg. Co., Waterford, N. V	
Presses, Power, Makers of, Beecher & Peck, New Haven, Ct	
Merriman A. H., West Meriden, Conn	-
Power Hammers. Bradley & Co. Syracuse, N. Y. Dienelt, Eisenhardt & Co., Philada., Pa. 4 Presses, Fruit and Vegetable. 4 Presses, Fruit and Vegetable. 4 Mohawk & Hudson Mfz. Co., Waterford, N. Y. 3 Presses, Power, Makers of. Beecher & Peek, New Haven, Cr. 30 & 3 Hillsa & Williams, 167 Plymouth. Brooklyn 4 Merriman A. H., West Meriden, Conn. 4 Peerless Punch & Shear Co., 52 Dey, N. Y. 4 The Stiles & Parker Press Co., Middletown, Ct. 3 Pulleys. 3	8
Penneld Block Works, Lockport, N. Y	1 8
Providence 1001 Co. Providence, R. 1	. 8
Hartford Compressed Air Pump Co., Hartford Conn	
Hartford Compressed Air Pump Co., Hartford Conn.  Gonn.  Mercer B. F., Alliance, O. 4 Rumsey & Co., Seneca rails N. Y. Rumsey L. M. & Co., St. Louis, Mo. 4 Union Mix. Co. of Chambers, N. Y. Weindel H., Philadelphia, Pa.  Rails, Fron and Steel, Makers of.	9
Rumsey L. M. & Co., St. Louis, Mo	1
Rails, Iron and Steel, Makers of.	8
Bates & Despard, 117 Pearl, N. Y.	
Cleveland Roiling Mill Co. Cleveland, Ohio4 Combination Steel and Iron Co., 82 John, N. Y.	
Union Mfg. Co of Chambers, N. Y. Weindel H., Philadeiphia, Pa.  Ralia, Fron and Steel. Makers of.  Allentown Rolling Mill Co., Allentown, Pa  Bates & Despard, 117 Fearl, N. Y.  Cambris Fron Co., Johnstown, Pa.  Cambris Fron Co., Johnstown, Pa.  Combination Swell Co. Cleveland, Ohio  Combination Swell Co., Danville, Pa.,  The Eagar Thomson Steel Co., 57 Broadway, N. Y.  Hazorn,	1 8
Hazora. Field Alfred & Co., 93 Chambers, N. Y	5 8
Field Alfred & Co., 93 Chambers, N. Y. Tower L. C., Rochester, N. Y. J. R. Torrey Rass Co., Worcester, Mass. Worth B., Sheffield, England.	7
Rivets. Falls Rivet Co., Cuvahora Falls, Ohio	
Kivets. Falls Rivet Co., Cuyahoga Falla, Ohio. Gilmor Wm., of Wm., Baltimore, Md. Grundy Geo. C., 165 Greenwich, N. Y. Hoopes & Townsend, Philadelphia, Pa. Old Colony Rivet Co., Kingston, Mass. Townsend W. P. & Co. Pittsburgh, Pa.	3
Hoopes & Townsend, Philadelphia, Pa4 Old Colony Rivet Co., Kingston, Mass4	9
Townsend W. P. & Co. Pittsburgh, Pa4 Rock Breakers.	9
Rock Breakers. Farrel Foundry and Machine Co., Ansonia, Conn Gates & Scoville Iron Works, Chicago, Ill	8
Garrison A & Co Dittahungh Da	6 1
Roofing. New T. 39 John, N. Y.  Rules, Manufacturers of Stanley Rule and Level Co. 30 Chambers W. V.	3 9
Stanley Rule and Level Co., 29 Chambers, N. Y	3 1
Stanier Kule and Level Co., 29 Chambers, N. Y. Sad I ron. 25. Enterprise Mfz. Co., Philadelphia. 38 and and Emery Paper, Makers of. Raeder, Adamson & Co., 730 Market, Philadelphia. Sand Sifter.	9
Raeder. Adamson & Co., 730 Market, Philadelphia Sand Sifter. Riehlé Bros., Philadelphia, Pa	1
Richlé Bros., Philadelphia, Pa	1
Universal Sash Lock Co., Albany, N. Y.	
Same Makens of	7 7
Saws, Makers of. Boynton E. M., so Heekman, N. Y	3 7
Boynton E. M., so Heekman, N. Y.  Disston Henry & Sons, Phila.  Gerlach Peter & Co., Cleveland. Ohlo	8 7
Boynton E. M., so Heekman, N. Y.  Disston Henry & Sons, Phila.  Gerlach Peter & Co., Cleveland. Ohlo	8 7
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Boynton E. M., so Heekman, N. Y. Disaton Henry & Sona, Phila. Gerlach Peter & Co., Cleveland. Ohio. McNiece W. Philadelphia, Ps. Waceter, R. Adden & Clemsen Mfg. Co., Middle-town, N. Co., Middle-town, Middle-town, N. Co., Middle-town, Mid	8 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
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# The American Dynamo-Electric Machine, For Electro-Plating, Electrotyping, &c.

Requires no Water.

Combining all the



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## ZUCKER & LEVETT, Gen. Agents,

Manufacturers and Importers of NICKEL PLATERS' SUPPLIES, 540, 542 & 544 W. 16TH ST., N. Y.

One Each STOCK, COLLET,



LITTLE GIANT

Send for price a.

WELLS BROTHERS & CO., Creenfield, Mass.

METALS.

## NEW YORK WHOLESALE PRICES, February 2, 1881.

AVEN I ZELIO.	4 Per cent
IRON.—DUTY: Bars, 1 to 1/40. W B; Sheet, Bs Hood and Scroll. 1/4 fo 1/40. W B; provided, that no of the above fron shall pay a less rate of duty that per cent. Pig. 87 W ton; Polished Sheet, 30. W Wrought Scrap, 88 W ton; Cast Scrap, 80 per t Railroad. 70. W 100 Bs. Boller and Plate, 1/40. W Ps.	4 Per cent
of the above Iron shall pay a less rate of duty that	1300 9 46 20 40 40 40 40 40 40 40 40 40 40 40 40 40
Wrought Scrap, \$5 \(\pi\) ton: Cast Scrap, \$6 per t	on. 18 "
Railroad. 70c. W 100 Bs. Boiler and Plate, 1965. W 1	). 30 <sup>41</sup>
Foundry No. 1 \$ ton \$25.00 @ 2	oo valued at 7 cents # B., or under, 244 cents; over
Fren - AMERICAN	STEEL.—DUTT: Bars, Ingots, Sheets and Co valued at 7 cents \$\pi\$ m., or under, 24\(\frac{1}{2}\) cents, over the control of the cents o
SCOTCH. FOR 20.00 is 2.	Railway Bars, in part Steel, reent # b. Provide
Egiliton	that Metal cemented, cast or made from Iron by the Bessemer or pneumatic process, of whatever form
Coltness # ton 24 50 @ 24	description, shall be classed as
Gartsherrie	American Cast Steel.
Rails.	
Iron	Dittsburgh.   Dittsburgh.   Distsburgh.   Dists Steel.   Dist Cast.   Distsburgh.   Dists Cast.   Distsburgh.
	.00 Best Cast B m rs
Wrought Scrap ♥ ton	Round Machinery, Cast
Bar Iren, from Store	" Swaged, Cast # 18 180
Common Iron:	Blister, rst quality * 3 133
to in. round and square	30 German Steel, Best Tric
Refined Iron	3dquality 9 90
Refined from	50 Sheet Cast Steel, 1st quality 9 3 153
to 6 in. x and 5-10 W h 2.	gdquality D 125
Bands—1 to 6x3-16 to No. 13 9 3.	ANTIMONY See Trade Report  LEAD.—DUTY Fig St w 100 h s; old Lead, 1540 h  Pipe and Sheet, 540 w n  Pipe 554 d ts or  Tin Lined Fipe 556 d ts or  Shoet. Drop 756, 30ac, 354  Chilled Shot. BABBITT METAL.
Norway Nail Boos	C LEADDUTY Pig 82 % 100 h s; old Lead, sign h
	American
Common R. G. American America	Bar Pine
20 00 201111 1111111111111111 2 3/6	Tin Linea Pipe
25 to 26 10 10 3% 5	Shor
21, to 26.	Chilled Shot
Baivanised, to to 20. # 15 20 quas  21 to 22 # 15 26  25 to 25 # 15 26  26 # 10 10  Patent Planished. # 10 120; R, 105	I. BABBITT METAL.
Balvanised, 10 to 20 W D oc	N. P. U
25 to 26 # 70 9140 834	TIN DUTY : Plates, Sheets, Tagger and Terme, t.10
41 28 W D tto 91	b; Electro-galvanised Plates, 20 W b; Manufacture
Patent Planished P m 120; B, 10)	c and Pigs free. Banca, subject to duty of 10 per cent
American Cold Rolled	Panca b 25 6 26
COPPERDury Pig, Bar and Ingot, se; Old Co	TIN,—DUTY: Fistes, Sheets, Tagger and Terne, t.ic by Electro-galvanized Plates, 2c # b; Manufacture of of, not enumerated, as per cent. ad. val. Bars, Bloc and Plas free. Banca, subject to duty of so per cent and val. Bars, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, subject to duty of so per cent and val. Banca, Bloc Banca, su
OPPER. DUTY Pig. Bar and Ingot, cc. Old Copper ac his Manufactured (including all article of which Copper is a component of chiefvalue), 45 % a	d IC rowse)
American Ingot B See Trade Renor	14X20   Prime Charcoal
SHEATHING, BRAZIERS COFFER. BOLTS, &C.	IC 12X12 " \$6.50 @ 6.7
Braziers' Copper, ordinary sizes, 1002. per sq.	14X20 Charceal
Reaxiers' Copper, ordinary sizes, under 16 os.	D C 1216X17
Braniers Copper to or and to on War fi	X   10X11   Charceal
Lighter than 10 os. # sq. ft # 33	CORE TH PLATE
BREATHINO, BRAHERS COFFER. BOLTS, &c.  Braglers' Copper, ordinary sizes, toos. per sq. 16., and over per lb. Braxiters' Copper, ordinary sizes, under 16. and over 12 os., # sq. ft. Braziters' Copper 10.05 and 12.05, # sq. ft. Braziters Copper 10.05 and 12.05, # sq. ft. Braziters Copper 10.05 and 12.05, # sq. ft. Braziters Copper 10.05 and 12.05, # sq. ft. Circles sq. ft. Braziters Circles sq. ft. Braziters Copper, over 12.05. # sq. ft. Braziters Copper, over 12.05. # sq. ft. Braziters Copper, over 12.05. # sq. ft. Copper, bottoms.	C   C   C   C   C   C   C   C   C   C
segment and Pattern Sheets 31	I C 14x20 \$6.00 \$25 \$ 47
Competing Copper, over 12 Of. F sq. ft	O I O 12X12 6.25 \$.50 \$.75
Bolt Copper. # b as Zopper Bottoms. # b 31 No Copper is Sheathing except 14x48 inches and ne 0 exceed 34 on to the sq. it.	TERRE PLATE.
No Copper is Sheathing except 14x48 inches and no	1 1 0 14320 86.50 E21 Lac # 1.20
	Tanna Flata.  Frime Char, 2d quat.  I C 14x20 84.90 5.25 5.00 5.21  I X 14x20 7.40  I U 10x28 11.40 11.00 20.40 \$11.00  I X 20x320 12.50  I C 20x320 22.00  I C 14x30 M. F. Brand 7.75 \$ \$.00  SOLDER KR No. 1, 120 € 13 € 1 No. 2, 120
4X48, W sheet 6	IX 20X28 15,50
All other size Sheets, 25c. per square foot, Fot tinning both sides, double the above amount. O'BEILL'S PATENT PLANISHED COPPER.—Net.	I C 14×20 M. F. Hrang
O'REILL'S PATENT PLANISHED COPPERNot.	BOLDKR
and it on and heavier 7 9 360 By the case, w s 350	LEE DIVERSE DOLL : VIN LAND! Lond und Lauces! droin &
and it ox. and heavier. 7 h 36s By the case. W h 36c ox. and lighter	American, cash
Poller Sizes, 7 in., 14x52. 8 in., 14x55. 9 in., 14x50. and 16 oz. and heavier. 9 3 30 By the case. 9 3 370 (And all sizes not over 20 in. wide.)	American, cash  Barsen Port from Lehiga Ore
and re on, and heavier. W h 350 By the case. W h 370	ZINC Pir or Block, 1.80 When Sa. Sheet
and for and heavier # 3 400	Open
Brass.	
Brosen & Sharp's Gauge the Standard for Weta Old English Gauge the Standard for Wire, BRASE MANUFACTURENS "BLOCK LIST—"dis 20%.	Danon Stock for
BRASE MANUFACTURERS' PRICE LIST —die 20%. Juno 10, 1880.	Paper Stock, &c.
Cash prices for Roll and Sheet Brass. For less quan	
thy than rue bs. add ac ♥ D. HIGH BRASS.	(Dealers' Selling Price.)
All Nos. not thinner than to No. 28, wider than 2 in.	White the Cutters We are the Control of the Control
All Nos. not thinner than to No. 28, wider than 2 in., not wider than 14 in 300 All Nos. to No. 28, inclusive, and widths over 14 to	White Shirt Cuttings, No. 1
all Nos. to No. 28, inclusive, and widths over 20 to	Mill Assorted Whites
% in., inclusive	City Whites, No. 1 434 9 5
Me & advance on each No. above Nos. 28 to 38, in-	New Seconds, light
All Brass thinner than No. 8 is Platers' Brass. at 490	" dark
	1 No. 2 White-
Sheets 24X48, and all sheets cut to particular sizes and lengths under 30 in., in width wider than 2 in.37c	No. 2. Whites
Sheets 2448, and all sheets cut to particular sizes and lengths under 30 in., in width wider than 2 in. 370 Printers' Rules	No. 2. Whites
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Bueers within their 30 th and their to the contract of	No. 2, Whites
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	Waiting Spanish				946
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@ B zalec	6 x 8 to 10 x 15	2 6.co	A 4.75	\$ 5.50	\$ 5.25
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end, rien m w	18 X 23 SO 30 X 30	9.35	8.50	2.75	7'25
-140-140	26 X 28 to 24 X 35	11.00	20.00	0.00	
534 @ 434c	26 X 36 to 26 X 44	28.75	20.75	9.40	
	30 X 46 to 30 X 50	13.25	12.90	20.40	
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70. dis 20 % (0, Huck, 8140	34 X 58 to 34 X 60	85.50	15.00	13.25	
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Bars, Block	18 X 14 to 16 X 24	12.75	22.75	BO. 75	
% 25 @ 260 % % 220	15 X 36 to 24 X 30	14.25	13.00	13.40	
	26 X 36 to 26 X 44	10.25	14.75	13.00	
	26 X 46 to 30 X 50	17.40	16.75	14.25	
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.86.50 (8 6.75	34 X 48 to 34 X 60	20.50	E9. 90	18.00	
	36 X 60 to 40 X 60	23.00	21.00	20.00	
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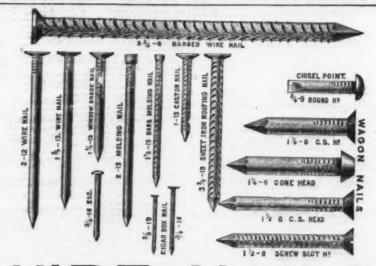
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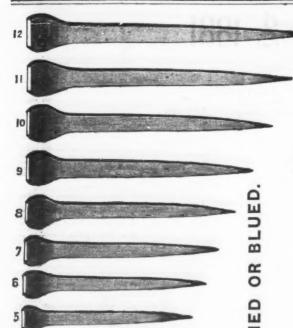
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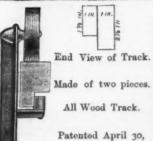
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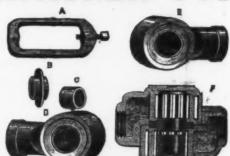
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" Univ sal Expansive, each \$4, to—dis 20 \$ Gimlet Bits. \$7.0 ₱ gross, dis 45 \$ Gimlet Bits. \$7.0 ₱ gross, dis 45 \$ Gimlet Bits. \$8.0 ₱ gross, dis 45 \$ Diamond. ₱ dos \$1.0 dis 205 \$ □ Bee " dis 3,25.5 \$ □ Ct. Valley Bitg. Codis 205 \$1.0 \$ □ Hartwell'sdis 40 \$1.0 \$ □ Hartwell'sdis 605 \$1.0 \$ □ Hartwell'sdis 605 \$1.0 \$ □ Liftonmediseu's Ship Augersdis 40 \$1.5 \$ □ Liftonmediseu's Ship Augersdis 1.5 \$ □ Valley Bitg. Codis 205 \$1.0 \$1.0 \$ □ Ship Augersdis 1.5 \$ □ Ship Augers
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" " Douglass" dis 40 % " Ives" dis 50 % Morse's Bit Stock Drill dis 25 %
L'Hommedieu's Ship Augers dis 15 3 Watrous Ship Augers dis 25 "Extension Lip dis 30 S
AWI Multine
Sywing Brass Ferruse
Awls, Brad Sets, &cc. wls, Sewing, Commen gross \$1.70—dis 25&10 %
Awis, Brad Sets, &c.  wis, Sewing, Commen \$\psi\$ gross \$1.70\text{-dis} 25\text{dis} 25\tex
* Handled Brad
"Handled Scratch
## ## ## ## ## ## ## ## ## ## ## ## ##
46 to 6 and over
Bus Helders. Sprengle's Patent, per dos. \$15
Bainces
Bells
"Silver Chime. dis 20210 2 Globe (Cone's Patent). dis 24210 5 Gong, Abbe's. dis 20210 5 dis 20210 5
Barton's. dis 30&10 % Crank Taylor's dis 2c&10 % Brook's dis 30&10 &2c&10 %
Conne's dis 10 % Conne's dis 35 % Zever, Enrgent's, dis 60&10 %
### ### ### ##########################
Gall. dis 24 5 Cow, Common Wrought dis source to the sourc
** Sargent's new list
Connel's
Beliews. Elacksmiths', Common
Blacksmiths', Common
N. Y. Belting and Packing Conew list net
Bit fielders.  Extension, Barber's.  \$\psi\$ dox \$\frac{1}{2}\$1.500-dis 40\frac{5}{2}\$\$  Extension Barber's.  \$\psi\$ dox \$\frac{3}{2}\$1.500-dis 40\frac{5}{2}\$\$  D'agonal.  \$\psi\$ dox \$\frac{3}{2}\$1.500-dis 40\frac{5}{2}\$\$  Angular.  \$\psi\$ dox \$\frac{3}{2}\$4.00-dis 40\frac{5}{2}\$\$
Blind Adjusters.—Domestic 4 doz \$3.00, dis 15 %
Blind Fasteners. per doz. pairs, \$1.00. dis 108  Mack reil's per doz. pairs, \$1.00. dis 108  Van sand's No. 2008, per gross, \$10.00. dis 10 8  old pattern \$2 gross, \$2.00 as 10.00 as
Washoura's rates and mackrell's
Barbed, 14 in. and larger
Differential Pulley Blocks
Sheaves "dis 35 5
Bolina Barrel. Shutter. &c
Wrought Barrel dis6.2:10 % Wrought Barrel dis6.2:10 % Square dis 602:10 % Square dis 602:10 % Suntter all Iron. Stanley's liss dis 502:10 %
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Wrought Harrel
Carriage and Tire, Common
B. & W. Carriage (old list). dis 60% to \$2. B. & W. Carriage (old list). dis 65.5 Thre. Am. Serew Co.'s, Phila, new list, Nov 1, '70.
Bay State"
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	Geer's Spring and Blank Butts	COL 100 100
	Gem Spiral Spring Butts, Japanned. dis 25 Geer's Spring and Blank Butts. dis 25 Sabin Mrg. Co.'s Double Acting. dis 25 Subin Mrg. Co.'s Double Acting. dis 25 Union Spiral Spring, Japanned. dis 25 Union Spring Hinge Co.'s. dis 25 Union Mrg. Co. dis 26 Bommer's. dis 26 Bommer's. dis 26	
	Union mig. Co	1
	" Shepard's "Double Locking" Nos. 1 & 1	AN MIN
	" Nicholsondis 4c&ro dis 4c&ro dis 50 %	I
	How Pine.	1.5
	Rotchkiss* bow list net Humason, Beckley & Co.'s dis 60 to 8 Bargent & Co 's	E
	Butchers' Clenvers.   Humason & Beckley Mfg. &co.   dis 20 5 Bradley's.   dis 21 5 Beatty's.   dis 25 5 Beatty's.   dis 25 5 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 6 7 8 8 8 8	E
	\$10.50 10.00 21.50 24.00 27.00 30.00 33.50 30.50	9
	Can Openers.         ₱ dos \$2.00. dis 25           Messenger's Comet.         ₱ gross \$7.40. dis 10 %           Duplex.         ₱ doz 240. dis 14@20 %	
	Lyman's	1
	Lyman's.	287
	U. M. C., F. C. trimmed	N
	Cnps—Percussion, ¥ 1000. U. M. C., F. C. trimmed	8
	Colt's Pistol, 700   1085   8   F. L	g
	Musket, in 1-10's	E
	Cottondia 10 %	W
	Carpet Stretchers.  Cast Steel, Polished	B
	Casters.  Bed new list July, '80, dis 35-80.  Bed dls 3480 5  Deep Socket dis 25-80 5  Deep Socket dis 25-80 5	K
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	Sargent's	B
	" 7-10-2	BW
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	White \$\Pi\$ gross fore net Red. \$\Pi\$ gross fore net Red. \$\Pi\$ gross fore net Blue \$\Pi\$ gross fore net white Crayons. \$\Pi\$ gross fore net white Crayons. \$\Pi\$ gross fore net bet \$Chiseis.	E
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l.	Cocks, Brass, new list July 10, %)	Ge
	Plain Bibbs	CI
-	Board and Box	Bi
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1	Per dos \$14,00	Er Al
-	Caliners	Bu
	Dividers	G
-	Excelsion	W
1	Bradley's	Na
	Corn Knives and Cutters.—Bradley'sdls to % Wadsworth'sdls 331/6 %	De
01	Crew Bars.  Cast Steel.	Ti
-	\$\frac{4}{5}\frac{4}{6}\$  ln. \$1.80 \ 2.00, 2.40	Fa Sa
F	Curry Combs.	Re U.
of her	Iouchkias Noveitynew list, July, 1880, dis 25 %  Exclr. Supr. Champion	V.

	7100010 111000,	
4	Cutiery. Maridan Cutlery Co. (Table)	
× 4	Meriden Cutlery Co. (Table)	* *
79.99.70	Naugatuck Cutlery Co	16 %
PARK!	Deg Celiars.	- 1
7. X X	Boor Springs.	- 1
发发发	Torrey's Rod	*
K.	Bee Rod.	2
5 5	No. 1, Large, Japanned # doz \$3.50 \ No. 2, Medium, # doz 2.50 \ dis No. 3, Small # doz 2.60 \	15
E 1 1 1	Challenge (Coff)— Nos. 9 7 6  Japanned	
5555	Galvanized	
K	Warner   Gem (Coll)   Water	×
200	No. 7, Large	X
	Sabin's Crown, \$6 602 \$2.75, dis 50 Philadelphia5 in., \$5.00; 8 in., \$7.00, dis 35	100
3 6 6	Barker's Concessed   Concess	6
	brawing Knives.	
-	Armgon Edge   Graph	6
ī	Bradley's	
-	Douglass	-
-	Blacksmiths Seif Feedingeach \$2.70 net	1
	Breast P. S & Wdis 20&10 4	1
	Barrana Williams	. II
	1	
	* Whitney *	4
	Whitney's Hand Drill	
	Automatic Boring Toolseach \$2.25, dis 20 9  Drill Chucks.—Mor Beach Patentdis 30 9  Adjusteach \$10.00; disso 5	
-	Page Heaters.	
	Acme	
	Family	
-	# 100 \$15.00 @ \$54.00, net	t i
-	Mill E. Buckets, heavy, 5 to 10 inches (Duc's Improved)  Storehouse. Duc's Patenth 12 to 25, 25, 25, 26, 26, 25, 20, 20  Storehouse. Duc's Patenth 12 to 27, 25, 26, 26, 25, 20, 20  Genuine Chester—Regular Nos	
	Emery and Emery Paper. Genuine Chester—Regular Nos	
	" Flour and FF B b ac Washington Mills-Regular Nos S D ac "Flour P D ac	
-	"Flour	
	Excelsior Milis, Regular Nos., Grain in kegs \$\psi\$ 5 6  Flour and FF " \$\psi\$ 5 6  Flour b \$\psi\$ 0.0 net  Wellington Milis, Grain \$\psi\$ 5 6 net  "Flour \$\psi\$ 5 8 net  Hampden Emery Grain \$\psi\$ 5 8 net  Flour \$\psi\$ 0.0 net  B, & A. Emery Paper dis 20025	
	Hampden Emery Grain	
	B, & A. Emery Paperdis 2002; \$ Knameled and Tinned Ware.	1
	Retties	1
	Knameled and Tinued Ware.   445	
	Brass	
	Racutcheena. Door Lock	
	The core   Cor	
	Wood and Metallie	1
	Cork Lineddis 70 % Enterprise (Self Measuring)# dox, \$36.00, dis 25 %	1
١	Felies Plates # B 100, dis 10 %	
	Files.  Arcade.  Black Diamond, new list.  E. M. Boynton's	18
	Nicholson	200
l	Hiscox File Mfg. Co., new list	1
ı	Walter Spencer & Co.'s "Diamond" 4.56 fo &	
		0
١	Union File Works (new list)	i
	Finting Machines.  Knox, 4-inch Holis	3
	Peertess, 4-Inch Mous 4.00 each not	0
	4.78 each uet Eagle, 3%-inch Roll	E
1	Eagis, 34-inch Roll. \$2.15, dis 10 5   " 1/4" \$3.8.8, dis 10 5   Eureka. No. 2, 7-inch Roll. 6.00 each, dis 10 5   No. 2 4-inch Roll. 6.00 each, dis 10 5   Crown. 35-5-in. 35,00-in. 35,00-in. 36,00 each dis 10 5   Star. 45 in. 34,00 in. 35,00 each dis 10 5   Crown Jewel. 6. in. 34,00 each dis 10 6   American, cin., 35,16 in. 31.40; 7 in. 38,50 each dis 10 5   Domestic Fluter. 7. 10. 40 dos 315, dis 20 5   Crown Hand Fluter. No. 1 51,00; 12, 31.00; 13, 31.00   5 dos. 15   Shepard Hand Fluter. No. 75 \$ dos 315, dis 10 5   Shepard Hand Fluter. No. 75 \$ dos 315, dis 10 5	I
	Crown . 4)6-in. \$3.50:6-in. \$4.00:8-in. \$6.50 each dis to \$ Star	1
	American, sin., \$3;6 in., \$3.40;7 in., \$4.50 each, dis 10 % Domestic Fluter	0
l	Crown Hand Fluter, Nos. I, \$15.00; 2, \$13.00; 3, \$10.00 \$ dos	E
l	" " No. 90, 80.00; No. 110, 87.25; " No. 100, \$5.00 P dos net	1
	\$\frac{1}{2}\$ \$\frac{1}{2}\$\$ \$\frac{1}{2}\$\$ \$\frac{1}{2}\$\$\$ \$\frac{1}{2}\$\$\$ \$\frac{1}{2}\$\$\$\$ \$\frac{1}{2}\$\$\$\$ \$\frac{1}{2}\$	
l	Finting Scinsors	A
	Hay, Mapure and Sp. 11ng	E
	Fruit and Jelly Presses.  Caterorise Mfg. Co	B
	Frw Pans. Burnished, list as followsdls 60 %	N
	No 0 1 2 3 4 5 0 7 8 ₩ dos\$3.00 \$3.75 4.25 4.75 5.25 6.00 7.00 8.00 0.00 "Acme"	100
	Gauges. Stanley'sdis source \$	MADO
	Gauges. dis softes for Marking, Staniey's. dis softes for Chapin's dis softes for the Chapin's dis softes for dis softes for Disston's. dis 20 %	L
	Gimieta. Nail and Spike	I H C
	Eureta Gimiets	
	"Diamona dimieta dia 40 % Dounie Out Shepardson's dia 40 % Dounie Out Shepardson's dia 50 % Eartwell's dia 50 % I Ivos dia 50 % U Douglass dia 60 %	BR
	Glue Pots. Tinned and Enameled.	A
-	Glue Pets.  Glue Pets.  Glive P	H
-	Grindstone Fixtures. dis 40 5 Grindstone Fixtures. dis 708:10 \$ Sargint's Paien. dis 708:10 \$ Reading Hardware Co., new list. dis 258:10 \$ Gun Wuds.	CR
1	U. M. C. B. E. 11 up	BHD
ĺ	4	

Hammers. dis 15	Ladles.
Cheney's dis 27  Bartford Hammer Co. (new list July 20, 'bo) dis 20;  Humason & Beckley. dis 50;  Verree. dis 5,  Magnetic Tack, Nos. 1, 2, 3, \$1.25, 1.50 and 1.75 dis 25& 10;  Warner & Noble's. dis 50;  Kin's dis 20;	Lantern
Warner & Noble's.       dis to the state of the state o	Hurricane N
Hand Cuffs and Leg Irons.  Providence Tool Co.'s Hand Cuffs, \$15.00 \( \pi \) dos \( \text{dos} \) Leg Irons, \$25 \( \pi \) dos \( \text{dos} \)\	Ætna Yankee
Fower's dis 25;	Convex Refi
Nos 0 1 8 3 4 Per dos\$0.8e 1.00 1.18 1 35 1.50 dis 60&10	Lawn M Pennsylvan list
Boggriv's Latches         per dos \$50@co nel           Brønsed Iron Dron Latches         *** Ø dos \$50.7¢ @ 0.8* dis 10 5           Brøn'd Store Door Handles—Nuts         \$1.51* Plate \$1.08           no Plate         \$0.89*         dis 10 5           sarn Door         per dos \$1.40         dis 0.6           Wrought Cheet         dis 60% 10 5           surface Chest         Sargent's list         dis 60% 10 5           surface         Chest         dis 60% 10 5           ifting         dis 60% 10 5         dis 60% 10 5           aw and Plane         dis 60% 10 5         dis 25 5           Opynton's Pat. Loop Saw Handles         dis 25 5         dis 25 5           Hammer and Hatchee         0.8 25 5         dis 25 5	Lemon S Porcelain Li Wood Eureka, Tini
sarn Door	Wood. Eureka, Ting Dunlap's Im Sammis' Townsend's
Tush Chest	Cotton Chall Sil. Lake Ch
" Centennial Saw Handles	87.50 Mason's Lin Wire Clothe
Apple " assorted, " coe large,	Locks an Cabinet—Ea " Ga " Br
ocket " assorted, " 3.00 dis "Framing " assorted, " 5.00 20&10 Pile, assorted, # gross	Trunk, new Langstroth
"Centennial Saw Handies die 25 strad Awi # gross \$1.00, dis 20, di	Flat Key A. E. Deitz, I
larn Door, old pasternsdls 55&10 9	Plate
New England	F. Many's 'I Brantord Norwalk
terling Improved (Anti-Friction)dis foat of the ritree	Norwich P. & F. Corbi Russell & Er
he "Boss"dis. 50&10 %	F. & F. Corbi Russeli & Er Mallory. Wh Reading Har Trenton Loci Padiocks—R
lenshaw'sList of 136 changed to 14 00, dis 55 @ 60 % udd's " " 14.00, dis 55 @ 60 % "itch's (Bristol) " " 15.00, dis 55 @ 60 %	to W
iotchkias'	" R " C " J.
Harness Shaps.	Mallets
Hatchets.  slab Blood.  Shingling, Nos. 1 2 3.	Ment Cut Dixon's (P. 8 Miles' Challe
Tathing. Nos. 1 2 3	
Claw, Nos. 1 2 3 4 doz 7.74 8.50 9.25 Lathing, Nos. 1 2 3 4 doz 7.50 8.26 0.25 Inrd's	Hales'
Claw, Nos. 1 2 3 # dos 0.00 9.00 10.00 Lathing. Nos. 1 2 3 # dos 8.00 .50 0.00 erkes & Plumb	Draw Cut Eacl American Nos
Claw. Nos. 2 3,	Each Kieser's No.
Lathing, Nos. 12 \$ \$\psi\$ dos 7,50 \$ .25 \$ .000 \text{lingly}, Nos. 12 \$ \$\psi\$ dos \$\psi\$.000 \$\psi\$ \$\ps	Silver & Dem Pennsvivani Nos # doz Beef Shavers
Bningung, Nos. 1 2 3 w dos \$6.00 \$6.40 \$7.00	Mincing Am., (2d quai 3 blades, Lathrop's
Hay Knives.	Cowles Hdw
Lightning" \$\psi don \$20.00 net fadsworth s	Steenins Pa
ate, Western	Chase's Hard Bush's Lincolu's Pat
ate, Clark's No. 1	Weed's
** N. E. Reversible	Nalis
olled Plate	Hexagon Nut Washers Nut Crack Table (Huma Rlake's Patte
Providence" ( over 12 in. \$4.2 \ 100 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Rlake's Patte Turner & Sey Oskum. Best
erew Hook and Eye	U. S. Navy Navy Oilers.—Zi Brass and Co Malicable (Ha
ronght Strap and T, list Dec. 20, '77dis 60&10 %  Hees.—Riveted Shankper dos, \$1.00; dis 35 %	Malicable (Ha Prior's Paten
rubdis 15 %	Olmstead's, T
lanters' dis 5,5 ovill Pattern, Handled dis 20,5 ovill Pattern d	Pencila.
'insted & Lane, Planters dis 25 g dis 25 g Beovill Pattern dis 20@25 g	Dixon's Lead Lum
ird Cage, Sargent's list	Packing, N. Y. Beiting Picture No Brass Head, S
otton (Humason & Beckley Mfg. Co.)dis 40 %	Porceiain He
# Weston's, No. 1, \$10,00; No. 2, \$9,00 ₩ doz dis 2, \$  # McGill's, \$3,00 ₩ doz	Porcelain Her Niles' Patent. Pinking it Plaiting M
" Reading list	Magie Astor Plaiting Crown Plaitin
elt. (new list Dec. 24. 1870.) dis 60% to 8  sence—Hotchkins' \$5.00 w dos dis 10 8  Weston's No. 1, \$10.00; No. 2, \$5.00 w dos at 10 8  Mecfull's \$5.00 w dos dis 20 w dos at 15 8  Mecfull's \$5.00 w dos dis 20 w dos at 15 8  Bkinner's \$6.20 per dos dis 20 %  Bkinner's \$6.20 per dos dis 20 %  Reading list dis 60% to 8  Illing \$8 argent's list dis 60% to 8  arness . Reading list dis 50% to 60% to 6	Pianes and Bench, First (
rought Staples, Stanley, Stanl	Moulding Bailey's (Stan The Stanley (S Bailey's "Vict Defiance Adji
All Screw House Sate Space	Laffin Mfg. Co
Horse Nalls. Nos v. A. C. S. A. C.	
Polished	Pliers and Button's Pate
C 6 50 40 50 27 38 23 22 22 21 20 200 200 201 20 20 20 20 20 20 20 20 20 20 20 20 20	Piters and Sutton's Pate: Hall's Pat. Co 5in. \$20; No Humason & B Gas Piters
	Eureka Pliers Russeil's Paru P.S. & W. Cas Tin
Horse Shoes.—Burden	Diston's
10 Shoes	Chapin's Pate Non- Standard Rule
	Davis' Inclino
ood riesu Picks, sargunt's 7 dos 21.2, discorrost: 5  8 Mallets Pick in Head. \$\frac{1}{2}\$ dos 1.75 net  9 ick in Handle \$\frac{1}{2}\$ dos 1.75 net  10 axes Small, Cast or Malieable \$\frac{1}{2}\$ dos 1.20 net  10 tohen ice Tools \$\frac{1}{2}\$ dos 2.2 met  10 mblination lee Tools \$\frac{1}{2}\$ dos 2.30 net	Samson Post I Fietcher Post Vaughan's Pos
mbination ice Tools # doz \$300 net ettles. Brass, 7 to 13 inches inclusive # 220 net	6 in. \$23,60; 7 Eureka Digger Fruntug H Diaston's Com
ettles.  Brass, 7 to 13 inches inclusive	E. S Lee & Co
"Shoe dis t; Shoe and Bread Knives dos \$1.6 dis t; Spran's Shoe and Bread Knives dis 25; dis 25; and Straw—; Wadswortn's" dis 25; Sble and r'ocket See Cullery Knake	Pulleys. Hot House and Jap'd Screw.
rriage (Jap'd Soc. W gross)dis to Ruck	Jap'd Side Clothes
se—Commondis 302 102 macite Door KnobsNew list, dis 352 5	65 64 64 AB

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8 14 8 25 8 20 8 50	Readingdis 202 to 5 Monroe's Patent
is 5 Atio 8 to 8 20 8 15	Lauterns.  Tubular
ne s ro	t Peerless No. s. # dos \$11.75, dis 10&to \$ Brady's Patent dis 10&to \$ Brady's Patent dis 10&to \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
1 25 S	Convex Reflector
10 10 10 10 10 10 10 10 10 10 10 10 10 1	Lemon Squeezers.  Porcelain Lined. # dos \$6.00—dis 30 \$7 Wood
LIO S	Sammis   .
25 5 1 25 5 1 25 5 1 20 5 1 20 5	\$7.00
dis	Locks and Latches.  Jabinet Eagle
nei	"Bridgeport.) dis 25x2 \$ "A E. Detts. \$ "A E. Detts
110 % 10 %	F. Many's 'Extension Cylinder '\$10.40 \$ doz, net
50 % 50 % 50 %	DEMMORUSSISSISSISSISSISSISSISSISSISSISSISSISSI
40 % 6c % 10 %	Husseil & Erwin
60 % 60 %	Wm. Wilcox & Co and 2 s for cash Yale Lock Mfg. Co.'s "Standard"dis 40 s
10 % 40 % 10 %	Conestoga
70 % 40 % 10 %	Mallets.—Hickory dis rockros Lignumvice. dis rockros Penfield Block Works, Lig., Apple & Hickory dis 30 % Mean Cutters. Dixon's (P. S. & W.) NOS. 1 3 4
15 .75 .25 .40 k5 %	Miles' Challenge
75	Each\$3.00 4.00 5.00 11.00 13.00 36.00—dis 30 \$ Woodruff's (P. S. & W.)Ncs. 100 13.00 15.00  # dos \$15.00 18.00 dis 35 \$
00 00 00	Draw Cut Nos 5 2 0 8 10 Each. \$50.00 75.00 80.00 22.00 80.00 22.00 80.00 22.00
30 % 50 35	Mos 1 2 3 4 B 5   Klesser No. cs.   St.co 7.00 10.00 25.00 50.00   Klesser No. cs.   Klesser No. cs.   St.co 7.00 10.00 25.00 50.00   Klesser No. cs.   St.co 7.00 10.00   St.co 7.00 10.00   St.co 7.00   St.
2C 2C .OC	Gem. \$40 per doz., dia 40 \$ 8ilver & Deming. dia 25 \$ Pennsylvania. dia 25 \$
00 %	Nos
10 .60 .50	Am., (2d quality) per gross, 1 blade, \$7: 2 blades, \$12: 3 blades, \$18. net Lathrop's dis 154: 6
net Má	Mallets
64 %	Chase's Hard Metal. dis socio 5 Bush's dis cocio 5 Lincolu's Pattern. dis socio 5 Weed's dis socio 5
60 % 50 % 65 % 40 %	Boss, No. 1 2 3 4 4 Japanned Finish dis 25 4 4 Japanned Finish dis 25 4 4 Japanned Finish dis 25 4 5 4 5 4 5 4 5 4 5 4 5 4 5 5 4 5 6 5 6
10 % 10 %	Nalis and Washers. See Trage Report
10 % 10 % 10 %	Hexagon Nuts
10 % 10 %	Rinke's Pattern.  Turner & Soymour Mfg. Co
dis 20 %	Nave Diore Dincard Tin
35 % 35 %	Oimstead's, Tin and Zinc
35 % 10 %	Broughton's, Zinc
30 % 35 % 25 % 25 %	Turner & Seymour Mfg. Co. dis \$0.0, dis \$0.5  On Kum. \$\ \text{\$\text{\$\subset\$ \text{\$\text{\$\subset\$ \text{\$\text{\$\subset\$}\$\text{\$\t
10 % 50 % 8 3C	Dison's Carpenters' dis 40 & 10 S Pracking, Steam. N. Y. Beitung and Packing Co new list net Pricture Nails. Brass Head. Sargen's List. dis 40 & 10 S Porcelain Head. Sargen's List. dis 40 & 10 S Porcelain Head. Sargen's List. dis 40 & 10 S Porcelain Head. Take Sargen's List. dis 40 & 10 S Porcelain Head. Take Sargen's List. dis 40 & 10 S Porcelain Head. Take Mrg. Co dis 40 & 10 S Pinking Fracent dis 40 & 10 S Pinking Fracent dis 50 & 10 S Pinking Fracent dis 50 & 10 S Pinking Machines. dech \$15.00, dis 20 & 10 S Crown Plaiting Machines. dis 50.00, each \$15.00, dis 20 & 10 S Crown Plaiting Machines. dis 50.00, each \$15.00, dis 20 & 10 S Pinking Machines dis
% OF	Porcelain Head, Sargent's List
2 % % 20 % 20 %	Niles' Patent
10 %	Astor Plaiting Machine
10 % 14 %	Bench, First Quality
10%	The Stanley S. R. & L. Co., new ust Jan. 79. dis rock to stanley S. R. & L. Co., "dis 20ct to stanley studies of the stanley studies and the stanley studies and the stanley studies and the stanley studies are studies and the stanley studies are stanley s
10 %	Laurin Mig. Co
cile	The Globe Mfg. Co. "Baldwin Iron"
dla	Pliers and Nippers.  Button's Patent
dia 0.5	Piters and Nippers.         dls 33% a           autoo's Patent         dls 178 patent           Hall's Pat. Compound Lover Cutting Nippers No. 2;         510. \$20. 10. 4. 11. \$50 \$\frac{10}{2}\$ dos 1. \$45 \$\frac{15}{2}\$           Humason & Beckley Mfg. Co.         dis 15 \$\frac{1}{2}\$           Sureka Piters and Nippers.         dis 25 \$\frac{1}{2}\$           Sureka Piters and Nippers.         dis 26 \$\frac{1}{2}\$           P. S. & W. Cast Steel.         dis 26 \$\frac{1}{2}\$           Piumbs and Levels.         dis 15 \$\frac{5}{2}\$
dia . 9 1756	Russell's Parallel
7% 7%	Piumba and Levels.  Oisston's  Oisston's  Ois Staniey R. & L. Co.'s Pat. Adjustable  Non-Adjustable  Chapin's Patents Adjustable  Non-Adjustable  Ois 552105  Non-Adjustable  dis 552105
net os	Non-Adjustable die folker
0 % 0 % 0 %	Johnson's Patent Adjustabledis 60% to \$ Packet Levelsdis be@10 \$
net net net	Samson Post Hole Digger
net net	Post Heinometers
5 8	E. S Lee & Co.'s Pruner. II 2,50, dis 20 S
68	Pulleys.
IOS IOS 5 %	Hot House and Tackie dis foctors 5 Brass Screw dis foctroit 5 Brass Screw dis foctroit 5 Brass Screw dis foctroit 5 In Clothes Line dis foctroit 5 If Clothes Line dis foctroit 5 If "Anti-Friction," 5,50 dis locator 5 If "Anti-Friction," 5,50 dis locator 5 If "Tarbog Fat. Iron dis 5 If Tarbog Fat. Iron dis 5 If Sabade Back dis 5
5 %	" "Anti-Friction,"
0 %	Punchees
0 %	#pring

February 3, 1881.	T
Rall. Bliding Door Wrought Brass \$ 3 49c dis 20 5 Bran Port Iron, Painted , \$ foot 10c dis 60\$10	Old Colony. dis 12% C Remington's (Lowman's Patent). dis 25 S wo land's. dis 25 S Griffiths. dis 25 S
Barn Door,inch	Folished Steel
Rasor Straps.	Less than a casedis 642 to 5
Genuine Emerson   dis 40% 57     Badger's Emerson   dis 40%     Badger's (not Emerson)   dis 50%     Evans'   dos 80.00, dis 40%     Initation Emerson   \$\psi\$ dos 80.00, dis 20%     Tunt's   dis 40% \$\psi\$ Chapman     Sund's   dis 50% \$\psi\$ C	Defiance Metallie dis socios siron Wood dis socios siron siron dissocios siron si
	Spoke Trimmers.   P doz \$10.00 dis 40%5 \$
Iron and Tinned.	Spoons.  Basting
Rivet Sets	Solid Table and Tea.
Reflers.  Sarn Door, Sargent's list	Solid Table and Tea.   Clis 518
Hope.   Manufacturers' Net List, Jan. 5, 1881     Manufacturers' Net L	Tin Cowles Hdw. Co.)
Acme (Anti-Friction).    Hope	Stene.  Hindostan Hacker Stone
"Hay Rope Service of Boxwood. Ivory Chapin's. Standard. dis 70&10 \$ dis 60&10 \$ stephens.	"  *** No 2. ** ** 15 to net  *** Bilps No. 1, ** 15 400 net  **Arkansas Stone No. 1, 4 to 5 in ** ** ** 15, net.  *** No 1, 6 to 9 in *** ** ** 15, net.  **Turkey Oll Stone (Chase) 4 to 6 in. 8 to 8 to 8.
Staniey	Grindstones, Family, Loring's
Prom 4 to 1c lbs	Stove Pollsh.
Enterprise Star frons	Rubv. # gross \$3.7%, net Rising Sun # gross \$4.7%, net Dixon's Plumbage # 560, net Squares,
Name   Papers	Squares. Steel
Sash Cores	Copper Tacks and Nails   dis 30 \$
Such Locks.	Trunk and Clout Nails
Clark's, No. 1, \$10.00; No. 2, \$0.00 per gross. dis 33.53 Ferrusson's. dis 33.54 Walker's. out Hammond's Window Springs. No. 1, \$10.00; F gross, dis 1, \$7 Northup Window Springs, No. 1, \$10.00; F gross, dis 1, \$7 The Perfect, Clark & Smith, Flaid Jay'd Fgro \$10.00 net Fre, Kraha-Japid, E gro 11,00 net Nickel-Plated \$2 gro 27,00 net	Busace Nalis   Clis 25   E
Sash Weights.—Solid Eyes, in 500 B lots and over	Common and Ring. dis 15 %  Ives' Tap Borers dis 15 & 0 %  Enterprise Mfs. Co. dis 15 & 10 %
Manage Staffers or Fillers.  Miles.  W dos \$20, dis 30 f Perry.  \$4 dos, No. 15; No. 0, \$21, dis 35 f Braw CutNo. 4.  Enterprise Mfg. Co.  \$30,00, dis 20 t Enterprise Mfg. Co.  dis 20 t	Tapes, Measuring
**************************************	Tebucce Cutters.   Enterprise Mis. Co. (Champion)
"Hand. Panel. Rip. &c	Toe Calks.—Winsted. \$\psi\$ 90.6 sis.co, (iii \$\xi_0.055\) \$\psi\$ 7 timers' Tools and Machines.  Hachines (P. \(\hat{C}\) \(\psi\)
Shww.   Disston's Circular   dis 4   5   1   1   1   1   1   1   1   1   1	Transom Litters.
Nos 101 102 103 104 105 Per dox.\$10.00 8.50 10.00 7.50 6.25 net  **Baw Frames**  **Watte, vermons**  **Red, Polished and Varnished \$# dox \$2.35, dis 25, \$ Red, Polished and Varnished \$# dox \$2.00, dis 26, \$ Saw Bods \$# so list dis, 10% to \$.	Wollensak's Patent. diss; \$\fraps.\$ Graps. Game. Newhouse - dis so \$\fraps.\$ "Newhouse Pattern. dis \$\infty 25 \text{if Blake's Patent.} dis \$\infty 5 \text{if Blake's Patent.} dis \$\infty 5 if Side of Side o
Saw Bods. Stoles dis. 102:10 y  Baw Bots. Boynton's Patent X Cut, per dos. \$12.00; Hand Saw,	Rat. "Decoy"
8tiliman's Genuine # dos #3, 140#\$, 16 dis 10 %   Manay	Lothrons Brick and Plastering
Hammer, Hotchkiss	Warden dis to s Triers. Butter and Choese. dis 245 Viscs. List of July 1, 79 dis 30 5
Haw Bets.     Boynton's Fatent X Cut, per dos. \$12.00; Hand Saw, per dos. \$10.00 \$	Parallel, Parker's
Hatch Counter, No. 171   \$\psi\$ dos \$34. dis 3420 s	Morrill's   Gis 20210 \$   Morrill's   Gis 15 \$   Sargent's   Gis 55 \$10 \$   Trenton   Gis 37 \$   Backus and Union   Gis 40 \$
Humato Scie Co.   Gia 20& 5	Double Screw Leg   dis 10% in 5% i
Turnbull's dis 40 \$  Scale Beams, Chatilion's list dis 10 \$  Sargent's list dis 40 \$  Sargent's	# Stearn's dis 20210 \$  # Hopkins # dos \$1,5 0 dis 10 \$  Lowell Rand Viscs dis 20 \$  Richardson's Vise and Anvil dis 25 \$
Box, I Handle	Johnson's
Stip (common)	Wall Wheels.—Ravised listdis tocklot Wire. Brass and CopperList of June 1880dis 20 % Bright and AnnealedNos. o @ 18. dis 20 % ccs.
Dission's Patent Excelsior	
"Providence Tool Co	Wall Wheels.—Revised 188
	Saples   Galvanises   Saples
Round Head Iron   Clis 45     Flat Head Brass   Clis 50     Round Head Brass   Clis 50     Round Head Brass   Clis 40     Brass and Silver Capped   Clis 40     Japanned   Isis to Plain Screws   Clis 50     Coach Patent Gimlet Point, List per 100   Clis 60     Coach Common   Clis 50     Coach Common   Clis 50     Coach Common   Clis 50	Japanned Barb Fence. # 5 9c Galvanised # 5 10c Steel Music Wire, Nos. 12 to 27. # 5 81.24, net Turner & Seymour Mfg. Co., Picture Wire, dis Soday 5
Coach, Common	Clothes Line Wire, Galvanised. # coli 34640c net Wire Cloth, green and drab. # sq. ft, 3% c net Wrenches. American Adjustable
Hand	American Adjustable
Jack (Wilson's). dis 20 % Screw Window Balances. R. B. Hugunin's. \$30.00 per gross, dis 25% 10%; % Screll Saws.	Girard Agi. dis socio 5 Bemis & Call's Patent Combination dis 20 5 Merrick's Pattern dis 20 5 Briggs' Pattern dis 25 5 Gride Combination dis 25 5
Scrat Saws	Bemis & Call's Patent Combination
American (Cast) Iron	Wringers. Per dos Universai, XX No. 216
Mass. dis 335 % Mass. dis 335 % Mass. dis 75 % Shoaves. M. W. Co., list. dis 45 % Biding Door, M. W. Co., list. dis 45 %	Wringers.  Universal, XX No. 216 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9
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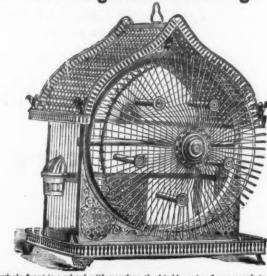
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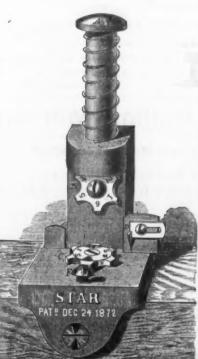
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There never was a Spring made that is so durable, so complete in its action, operating with a uniform pressure, holding the door tight when closed, and allowing it to open without increasing the pressure at any point. When the door is opened about 130 degrees of a circle, it will press and hold it open.

The Spring is easily unhooked and rehooked-in an instant-from the door and also from the jamb, without removing a screw or pin.

This is a Convenience Possessed by no other Spring in the Market.

We are making this season three sizes, viz: No. 1 For Screen or Light Storm Doors. No. 2 For Medium Doors.

No. 3 For Heavy Doors.

They are for sale by most of the prominent jobbers of the United States and Canada.

Correspondence solicited.



WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw. We make the following lengths, 3½, 4, 4½, 5 feet. Send for sample.

WHEELER, MADDEN & CLEMSON MFG. CO., Middletown, N. Y.



NEW MAKE OF MINE LAMP. COLLAR BRASS HINGE, Solid Lid. NO SOLDERINO MELTOFE LEONARD BROS., Scranton, Pa.

A. J. DAVIS & CO., Patent Friction Hoisting Engines For Mines, Quarries, Dock Building, &o. MANUFACTURERS OF SHAPERS, DRAIN PIPE MACHINES, BAG AND SATCHEL MACHINERY,

Steam Engines, Wire Drawing Machinery, &c., &c. 69 N. J. R. R. Avenue, Newark, N. J. Correspondence solicited.

HUNDLEY & HANKS, PROPRIETORS OF NORTH CAROLINA HANDLE CO.



MANUFACTURERS OF Handles and Spokes,
78 Reade Street and 97 Chambers Street,
HARDWARE COMMISSION MERCHANTS.

PHILADELPHIA.	Serowa.
(Corrected Weekly by Lloyd, Supplee & Walton.) Terms, 30 days. For 60 or 90 days, interest added at 10	Screws. dis 50 Plat Head Iron. dis 50 Plat Head Iron. dis 50 Round Head Brass. dis 40 Plat Iron dis 45
per cent. per annum.	Plated
Anvils. Peter Wrights, ♥ B	Tinned
Reystone Centennial, 1875.         \$4.25           1877.         5.00           Reading No. 72         5.00	Philadelphia; in, \$5,00; \$ in., \$7.00 \tilde{\text{that dots dis 35}} \\ \text{Chatfield No. 1, \$6.75; 2, \$3.25; 3, \$4.00 \tilde{\text{that dots dis 35}} \\ \text{Gem Coil No. 1, Large Jap'd\tilde{\text{that dots \$3.50}} \\ \text{Modified No. 2, Large Data's\tilde{\text{that dots \$3.50}} \\ No. 10 Modified No. 10
Apple Parers.  Reystone Centennial, 1875.  Residing No. 72.  No. 74.  No. 74.  No. 75.  No. 7	Springs Torrey   \$\Phi\$ dos \$2.10 to Philadelphia\$ in., \$\phi_{<0}\$: \$\phi_
Lots of 10 to 25 dozen special prices.  A xes.  Hunt's Kentucky and Yankeeper dos \$11.00	Dixon Latiest dem:
Mann's Red Warrior 11.00 Richland Chief 12.00 Develed Axes 2 add 500 Here 12.00	Shoe Nails—4-8, 0460; 346-8, not \( \psi \)
Augers and Auger Bits.—New List January 1. Bates' Nut Augers	Traps. Genuine Oneida—Newhouse
Watrous' Ship Augers	Wrenches.—Agricultural
A xes.  Hunt's Kentucky and Yankee	Mall. Bar
Light and Commondis 15610 %	No. 19 to 26dia 60 to 62%
Bellia, Bros. Mfg. Co. Light Hand Bells,dis 60&10 S Swiss Pattern Hand Bellslow list dis 90&10 S Connell's Door Bells	Coppered, etc 18. dis 45 to 50 Tinned Broom Wire. dis 47½ to 50 Galvanised No. 7 to 18. Market List, dis 35 to 40 Wringers.
Belt and Rivet Cilppers. Chambers' No. 1. for % bolteach, \$7.50	Peericas No. 214
Bering Machines. Unright, without Augers. List 5.50	Wringer No. 2)4. Peerloss No. 2)4. Universal, No. 2)5. Novelty, No. 10.
Berins Machines. List 5.50 dis 40 % Lipright, without Augers	PITTSBURGH.
Stanley, Wrought Shutter	Merchant Iren.  TERMS.—Note or acopptance at 6e days, with currer rate of exchange on New York, or a discount of 2 pc cent. for cash, if remitted within 1e days from date involce.
Backus   dis 50 %	cent. for cash, if remitted within re days from date of invoice.  Flat Bar.
Cast Loose Joint, Narrow	134 to 6 by 134 to 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
American Ball	Invoice.   Flat Bar.   1% to 4 by % to 1 ingh
Table Hinges and Back Flaps dis sokto S  Narrow, Fast dis sokto S  Rind Rutte dis 5ckto S	t 50 134 2.50 36 50 916 2.5 2 50 236 2.70 36 50 916 2.7 2 50 236 2.70 36 50 716 2.7 236 50 345 3.00 36
Huffer's	Oval Iron.
Galvanised Pump. dis so fine and so fine a	Half Oval and Half Round.
Chark dis 70 Shopard dis 70 Shopard dis 70 Shopard dis 70 Shopard dis 60 Shopard	Horse Shoe.
Casters.—Bed (new list July 1, 1880,)dis 35&10 \$ Platedis 35&10 \$	6 Inch, Nos. 13 and 14
Coffee Mills.—Box and Side, new list Jan. 1. 1880	13 and 12
Landers, Frary & Clark, J. Russell & Co., Lamson & Goodnow Mfg. Co. and Meriden Cutlery Co., Manu- facturers' prices net.	Heavy Bands,
	114 to 6 by 14 and 6-16 inch. 2. 114 to 314 by 14 and 5-15 inch. 2. 1 to 174 by 14 and 5-15 inch. 2. 1 to 174 by 15 and 5-15 inch. 2. 14 to 15 by 15 and 5-15 inch. 3. 15 and 16 by 14 and 16 inch. 3.
	1½ to 6 by ½ to 3-16
Tinned	1 to 1% by Nos. 11 and 12.  1 and 13-16 by 16 to 3-16.  14 and 13-16 by Nos. 11 and 12.  3.  4 and 13-16 by Nos. 11 and 12.
Nicholsondis 40 \$	% and 11-16 by 16 to 3-16 % and 11-16 by Nos. 11 and 12 % and 9-16 by 16 to 3 16
Bpencer \$4.50 @ 4.75 & E. M. Boynton, new list	\$\frac{1}{2}\$ and \$\frac{1}{2}\$ by \$\frac{1}{2}\$ and \$\frac{1}{2}\$ bo \$\frac{1}{2}\$ by \$\frac{1}{2}\$ to \$\frac{1}{2}\$ to \$\frac{1}{2}\$ by \$\frac{1}{2}\$ to \$\frac{1}\$ to \$\frac{1}{2}\$ to \$\frac{1}{2}\$ to \$\frac{1}{2}\$ to \$
Eagle 35 in Foll 68ch \$2.15 dis 10 \$ Crows 45 in Foll 9 3.50 dis 10 \$	154 to 4, Nos. 13, 14 and 14
" —8 in. roli	134 to 2, No. 25. 134 to 2, No. 25. 134 to 2, No. 25.
Hammers. Yerkes & Flumb's, new listdis 30 % Bandles.	15-16, 1, and 1-6, Nos. 16, 17 and 18
Hatchets- Yerkes & Plumb, new list	15-10, 1, and 136, NO. 22  NOS. 15, 14 and 15  NOS. 16, 17 and 18  NOS. 16, 17 and 18  NOS. 16, 17 and 18  NOS. 10 and 20  30
Hinges. Strap and T	\$6. NO. 21
" Pol'ed & P's'd and Blued and Pointed, 31 28 2 25 24 23 Globe	13-10, NOS. 10, 17 and 10. 13-10, NOs. 19 and 20. 13-10, No. 21.
Clinton	4, Nos. 13, 14 and 15
Locks and Knobs.  Branford Gavlord Cabinet.  dis 25k2 5 cash	M. No. 22 11-16, Nos. 13, 14 and 15. 11-16, Nos. 16, 17 and 18.
American Padlocks	11-16, Nos. 19 and 20
♥ dos	Nos. 16, 17 and 18
Nail City	% No. 22. % No. 23. 9-16, Nos. 13, 14 and 15.
Lewn Mawers.—Pennsylvania	9-16, Nos. 19 and 20
Lawn and Garden Pumps. Holland Patent	6 inch, Nos. 13, 14 and 15. 6.1 Nos. 15, 17 and 25. 4.8 Mos. 10, 21 and 20. 4.9
Long and Short Cutternew list Pennsylvania Patternper dos	No. 21
Molasses Gates. Enterprise Mfg. Co.'s Measuring Faucets die as 4	The prices under Hoop from do not apply to the
### Glasses Gates. Enterprise Mfg. Co.'s Measuring Faucetsdis 24 to Stebbins' Gates	The prices under Hoop Iron do not apply to Cotton Ties.  Lico per lb. extra will be charged for each gauge lighter than the lightest indicated.
Ment Cutters.—Penns'vania aleat Cutter dia 408 10 \$	to specified lengths.  Barrel Hoons.
Ment Cutters.—Penns'vania aleat Cutter dia 408 10 \$	to specified lengths.  Barrel Hoons.
Meat Cutters.—Penns'vania aleat Cutter dia 40% 10 %	to specified lengths.  Burrel Hoops.  o to 11 lbs, per set of 6 hoops.  124 to 2 in., cut to length.  o to 11 lbs, per set of 6 hoops.  3.5  8 lbs. and less than 9 lbs. per set of 6 hoops.  3.5  Extras for Cutting to Length all Preceding Iron.
Cork Lined   Gir   Cork   Cork Lined   Gir   Cork	Extras for Cutting to Length all Preceding Iron. All Iron, including Tire
Cork Lined   Gis 70	to specified lengths.  Burrel Hoops.  114 to 2 in., cut to length.  0 to 11 lbs, per set of 6 hoops
Cork Lined   Given	to specified lengths.  Burrel Hoops.  134 to 2 in., cut to length.  o to 11 lbs, per set of 6 hoops 3.5  8 lbs. and less than 9 lbs. per set of 6 hoops 3.5  Less than lbs. per set of 6 hoops 3.5  Extras for Cutting to Length all Preceding Iron.  All Iron, including Tire 1.10  No. 9 and heavier 3.3  "Wings 3.5  Sheet Iron 5.6  Common. Charcoal. Juniate Common. Charcoal. Juniate Common. 1.5  No. 18 to 14 3.60 5.00 6.5  No. 18 to 17 3.80 5.30 6.5  No. 18 to 21 4.10 5.60 7.1  No. 22 to 24 4.20 5.60 7.1  No. 22 to 24 4.30 5.60 7.3
Cork Lined   Given	to specified lengths.  Burrel Hoops.  134 to 2 in., out to length.  5 to 11 lbs, per set of 6 hoops.  3.5  134 to 2 in., out to length.  5 lbs. and less than 9 lbs. per set of 6 hoops.  3.5  Less than lbs. per set of 6 hoops.  3.5  Extras for Cutting to Length all Preceding Iron.  All Iron, including Tire.  No. 9 and heavier.  Plow Slabs.  "Wings.  Sheet Iron.  No. 12 to 14.  3.50  5.60  5.60  5.60  5.7  5.60  7.9  No. 15 to 17.  3.80  5.90  6.50  7.9  No. 15 to 17.  3.80  5.90  6.7  7.9  No. 25 & 4.90  6.7  7.9  No. 27.  4.70  6.60  All sheets No. 18 and lighter, ever 30 inches widet lengths and set rest.
Cork Lined Meat Cutter s.—Penns'vania aleat Cutter dia octio pixon's.  dia 35 % Moodruff.  dia 35 % Hale's  new list, dia 30 o. Acto cash American.  dia 25 % Stuffers.  dia 35 % Laterprise Stuffers.  dia 35 % Laterprise Stuffers.  dia 35 % Lot oct.  dia 35 % Lot oct.  dia 35 % Lot oct.  dia 36 % Lot oct.  di	to specified lengths.  Burrel Hoops.  114 to 2 in., cut to length.  5 to 11 lbs, per set of 6 hoops 3.5  8 lbs. and less than 9 lbs. per set of 6 hoops 3.5  Less than 1 lbs. per set of 6 hoops 3.5  Extract for Cutting to Length all Preceding Iron.  All Iron, including Tire 100  Tunk Iron.  NC. 9 and heavier 100  Tunk Iron.  Common. Charcoal. Juniata  No. 18 to 14 3.50 5.60 6.6  No. 18 to 17 3.80 5.60 6.6  No. 18 to 17 3.80 5.60 6.6  No. 18 to 17 3.80 5.60 6.8  No. 18 to 17 3.80 5.60 6.8  No. 25 to 24 4.10 5.60 7.1  No. 25 4.10 6.00 7.3  No. 26 4.10 6.00 7.3  No. 27 4.70 6.20 7.5  No. 28 4.10 6.00 7.3  No. 29 4.10 6.00 7.3  No. 20 4.1
Cork Lined   Gis 75	Burrel Hoops.   Burrel Hoops.   134 to 2 in., out to length.
Cork Lined   Gis 75	Burrel Hoops.   Burrel Hoops.   134 to 2 in., out to length.
Cork Lined   Given	Burrel Hoops.   Burrel Hoops.   134 to 2 in., out to length.
Cork Lined   Given	Burrel Hoops.   Burrel Hoops.   134 to 2 in., out to length.
Cork Lined   Gis 75	Burrel Hoops.   Burrel Hoops.   134 to 2 in., out to length.
Cork Lined  Meat Cutter s.—Penns'vania aleat Cutter dia 20% to Dixon's.  dia 35 % Moodruff.  dia 35 % Moodruff.  dia 35 % Moodruff.  halo's new list, dis 20 dia 30 % Halo's new dis 30 % Halo's new list, dis 20 dia 30 % Halo's new list, dis 20 dia 30 % Halo's new list, dis 20 dia 20 % Alburn.  Scuffers.  Scu	Burrel Hosps.   Burrel Hosps.   134 to 2 in., out to length.
Cork Lined  Meat Cutter s.—Penns'vania aleat Cutter dia 20% to Dixon's.  dia 35 % Moodruff.  dia 30 % Halo's.  H	Burrel Hosps.   Burrel Hosps.   134 to 2 in., out to length.
Cork Lined  Meat Cutter s.—Penns'vania aleat Cutter dia 20% to Dixon's.  dia 35 % Moodruff.  dia 30 % Halo's.  H	Burrel Hosps.   Burrel Hosps.   134 to 2 in., out to length.
Cork Lined  Meat Cutters.—Penns'vania aleat Cutter dia 20% to Dixon's.  dia 35 % Moodraff.  dia 35 % Moodraff.  dia 35 % Moodraff.  hale's.  Rale's.  Rale's.  Rale's.  Rale's.  Rale's.  Rale of the state of the st	Burrel Hosps.   Burrel Hosps.   134 to 2 in., out to length.
Cork Lined  Meat Cutter's.—Penns'vania aleat Cutter dia octio 5 Dixon's.  dia 35 5 Woodruff.  dia 35 5 Kowe  dia 35 5 Kowe  dia 35 5 Kowe  dia 35 5 Kowe  dia 30 5 Hale's.  new list, dia 20, 22 to 25 Easterprise Stuffers.  dia 25 5 Easterprise Cutterprise Cash  dia 25 5 Easterprise Cutterprise	Burrel Hosps.   Burrel Hosps.   134 to 2 in., out to length.

_	
MANA	sed to 6od
MMMMM	## 150 to 60d. ## 2,85  ## 2 Note
MMM	% inch.  31 c  01 Well Steel Forgings.  32 c  33 c  01 Well Steel Forgings.  No grade of Crueible Tool Steel shall be sold for less than above prices.  Machinery Steel.
76	Bessemer &
% tot	Round
-	7-32 inco. 10/40 90 7-15 " 12/40 iid Square, Flat and Octagon, 1/40 extra throughout the list. Cut to specified lengths, 1/40 extra.
N W MI	Hammer Cast Steel.   2 inches and under
MMM	Sheet Steel.—Crucible.  Best. 2d Qual. 3d Qual. To 21 gauge130 , 110 oc oc oc of 6466
MMMA	To a gauge 130 lite as a square of 56 of centra for each additional gauge of 56 out to multiples or specified lengths, 3cc, extra. Miscellaneous Cast Steel.
MM	Auger and Auger Bits
	Pick, plain.         8c           and Mattock, beveled.         9c           Skate Steel.         9c           Table Cutlery.         9c           Pike and Cant Hook.         9c           Coal and Granite Wedge.         9c           Roller.         9c
	Roller. 990 Spindle, subject to Machinery classification 590 Trap Spring Steel 990 Forged Crank Pins and Lathe Spindles 1090 Forged to shapes 1090 Slide Bars, plain 1090
at of	" forged to shapes
SE SE	Boiler, Fire-Box and Flue Sheets, not less than 3-16 thick.
90 90 70	thick.  Circulars and semi-circulars, when ordered separ-stely.  Smoke Stack, to shape.  Locomotive Tank Steel.
70 90 10	File Cast Steel,
3C 5C 5C	Square, Round, Hair Round and Flat Bastard, 8-   Inch and over
30 70	Tire Cast Steel.
16	1x54a and over     8c       1x54b /5x54b and 44     85pc       1 and 45b and 53a 5x34b and 53a     9c       4 and 45x34 and 33a and 12g     94c       Solid Safe Cast Steel     74c       Agricultural Implement Cast Steel     74c       Fork and Bake Crueble
10 10 10 10 10 10 10 10 10 10 10 10 10 1	Pork and Rake, Crucible
ic ic	Description of the Court of the
0	spiral and taper, cut to lengths. 64cc Tree, 3-to thick and above. 54cc Toe Calk 54cc
4C	Sleigh Shoe
10 10 40 50	Rolling Coulter Blanks, cut and punched 0,50 Thrasher Steel 10,50
20 20 20 20 20 20 20 20 20 20 20 20 20 2	Rolled Hammer Billets
90 90 90 90 90 90 90 90 90 90 90 90 90 9	Furnace, Floor and Straightening Plates
00000	Housings and Castings not otherwise specified. 3 of Oguide Plates 3 of Spindles and coupling boxes. 3 of Sand Rolls and Pulnions, large size. 3 of Pipe Mill Castings small size. 3 of Pipe Mill Castings under so the Spirr and Bevel Wheels, large. 3 of Pullsys up to 30 inches amali. 4 of October 10 of Pullsys up to 30 inches amali. 4 of October 10 of Pullsys up to 30 inches. 4 of October 10 of Pullsys up to 30 inches. 4 of October 10 of Pullsys up to 30 inches. 4 of October 10 of Pullsys up to 30 inches. 4 of October 10 of Pullsys up to 30 inches amali. 4 of October 10 of Pullsys up to 30
000000000000000000000000000000000000000	Bolling Mill Castings under 50 bs. 50 Spur and Bevel Wheels, large. 300 Pulleys up to 30 inches. 440
0000	Engine Castings, light. 44c heavy. 49c Chilted Rolls.
ic ic ic	8 to 15 in. 6 8 to 40 in. 6 15 to 70
0000	White and Red Lead.  Strictly Pure White Lead in Oil, in kegs, in lots of 500 B and over, 90; less thon 500 b, 050 in 25 and 50 B Tin Palls, 500. W B over keg price; 1255 B Tin B class, 120.
0000	Palls, IC # B over keg price; assorted, 1 to 5 B, 100 B Cases, 12c. Dry White Lead. less than 400 lbs. 84c; over 400 lbs. 84c Orange Mineral, genuine, in kegs, 10c; in barrels, 9 c Red Lead, very brilliant, 8c; 74c Litharge (Potter's Lead) 8c; 74c Freights equalized with all policy.
00000	Litharge (Potter's Lead) 80; 746c Freights equalized with all points. Terms: Note at sixty days, or if paid within 15 days from date of invoice, a discount of 156 per cent. will be allowed, but not otherwise.
0000	Window Glass.  For Box of to Freet.—Discount fokus & on single stress at
0000	Single Strength.
000	Size. A.A. A. B. C. 6x 840 10 x 11.5. 88.25 87.50 87.00 86.50 13 x 14 to 16 x 24. 9.24 8.50 8.50 7.25 13 x 22 to 30 x 30. 15.75 9.75 8.78 7.87 7.25 13 x 36 to 4x 30. 15.75 9.75 8.78 7.75
8	15 x 36 to 24 x 36
	26 X 40 10 30 X 50. 15.00 14.00 11.25 10.75 9.50 30 X 52 10 30 X 54. 10.60 14.00 14.50 12.20 30 X 56 10 34 X 56. 17.25 15.50 13.50 13.50 34 X 56 10.34 X 50. 17.25 15.50 13.50 30 X 50 10 40 X 50. 18.25 17.25 15.50 13.50 30 X 50 10 40 X 50. 18.25 17.25 15.20 1
000	6 x 8 to 10 x 15
0 00	26 X 36 to 26 X 44
0	34 X 58 to 34 X 60. 29.25 27.75 24.00 36 X 60 to 40 X 60. 33.25 30.00 27.75
00000	An additional to per cent, will be charged for all glass more than 40 inches wide. All sizes above 52 inches in length and not making more than 51 united inches, will be charged in the 54 united inches bracket.
0 %	Durhamville Glass Works
0 0 0	FOX & COMPANY,
0	Manufacturers of SUPERIOR AMERICAN
00000	WINDOW CLASS,

Single and Double Thick.

DURHAMVILLE, N. Y. Established 1818. In lots to suit buyers, at lowest market rates. Price lists, estimates, &c., on application.

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> J. BILLERBECK, Manufacturer of Iron Gimlet-Pointed Wood Screws

PHILADELPHIA.



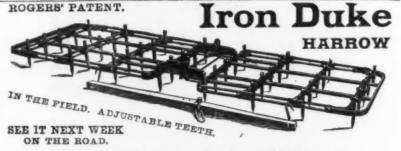
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SOLID WROUGHT IRON, STEEL FACE (P. W. Pattern), WARRANTED.

Particular attention is given to the manufacture of all kinds of Anvils when draw-

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Harrow Drags at an Angle of 45 Degrees.

First Premium at the Ohio State Fair, over forty-four competitors. Successful in a competitive test at Xenia and Dayton, against twelve and fourteen of the leading Harrows. The Iron Duke is all of best wrought and malleable Iron.

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R. B. SEIDEL, Manufacturer of SUPERIOR BLACK LEAD CRUCIBLES.

TURNED MACHINE SCREWS, One-sixteenth to five-eights diameter. Heads and points to sample. IRON, STERE and BRASS. JOHN FELLOWS,

(Successor to LYON & FELLOWS.) Factory and Office, 14 Durham Place, Williamsburgh, N. Y. FOR SCREEN DOORS,



LATEST AND BEST, GEER'S SPRING BUTTS WITH OUR NEW BLANK BUTT.

Try the new combination

The most effective of all Butts in the market, on a rinciple the reverse of all others, exerting their realest power when the door is closed.

THE COWLES HARDWARE CO., Unlonville, Conn., U. S. A.



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### W. C. WREN'S PATENT GRATE BAR.



This Grate Bar consists of short parallel bars for carrying the coal, mounted above a long supporting bar, extending across the furnace by short transverse plates, holding the short bars, which sustain the heat so far above the supporting bar that it is kept comparatively cool, and is not, therefore, liable to warp, bend or burn. The bars which are subject to the heat, being made in short sections, do not strain the supporting bar. The short bars break joints at the meeting ends to prevent a straight open space across the whole; also to guide the rake used by firemen in cleaning the furnace better than they otherwise would.

We therefore claim the following advantages over other grate bars offered for sale:

we therefore claim the following advantages over other grate bars offered for sale:

1. Great saving in fuel.

2. Such construction as will equalize all strain resulting from expansion and contraction, thus avoiding warping, and thereby insuring long service.

3. Thorough combustion of fuel, owing to the large air spaces exposed.

4. Bars will not weigh more! n proportion than the ordinary bar, and in addition to a saving of 25 per cent in fuel, will last much longer than any other bar in use.

The WREN GRATE BAR is in use at the works of the Atlantic Refining Co. and other recombinate concerns.

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IRON & STEEL BOILER PLATES & SHEETS. Brass and Iron Fittings for Steam.

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These scales are so constructed as to give a steady platform, without binding in any way, so that nervous and restless cattle can be weighed with perfect accuracy without delay. It is a difficult matter or an impossibility to weigh a load properly in fly time, for instance, on a swinging scale, the weigh beam moving violently up and down with every movement of the animal on the platform, while on the RIEHLE SCALE it is perfectly quiet and yet sensitive.

No one runs any risk in buying this make of scale; they are not experimental ones, but well tried and not found wanting by the many that have used them for years. At every fair where exhibited they invariably take the First Premium. A Silver Medal received at the last Pennsylvania State Fair. Try one; you will find it useful, cheap and good.

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N. B.—Manufacturers also of all kinds of Scales. Send for prices.

THE CENUINE STEBBINS

MOLASSES & OIL MANUFACTURED ONLY BY

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To the Hardware Trade :- Our arrangement with Messrs, Sargent & Co. for the sale of the Genuine Stebbins Molasses Gates" expired December 31, 1880. Hereafter we will supply the trade direct. Orders solic ited. Address

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### IRON & BRASS WOOD SCREWS.

Quality, finish and tests as to strength guaranteed equal to any

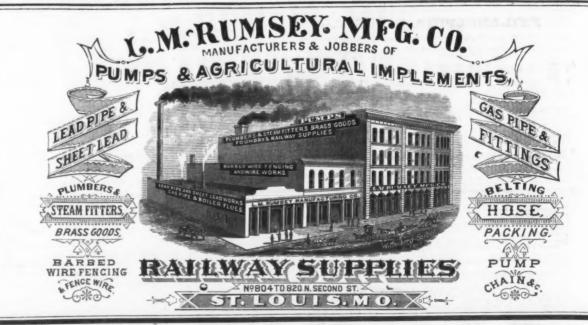
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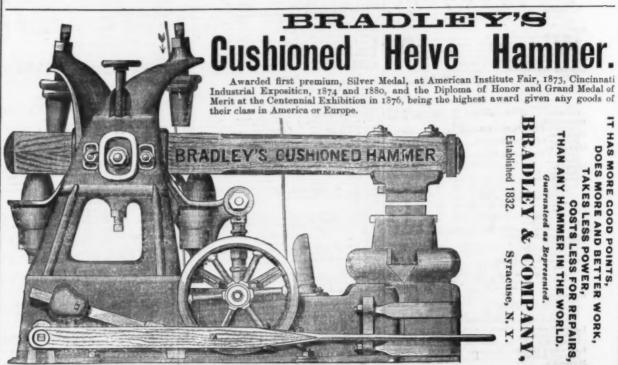


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POWERFUL DOUBLE-ACTION

Screw Carpet Stretcher,

HAMMOND'S 4 Window Springs

Lock and support upper and lower of sashes—all sizes. Are very conven-ient, simple and durable. Sample to the Trade free. W. S. HAMMOND, Lewisberry, York Co., Pa.

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For Example Grains, Section showing construction, 25 cts.

Successors to Racine Boat Co., Chicago, Ili.

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Dead Latches,

Trunk Stays,
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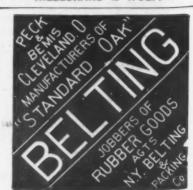
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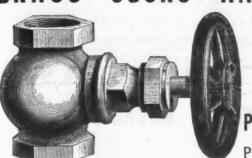
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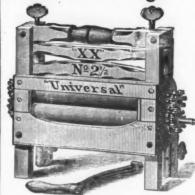
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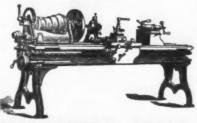
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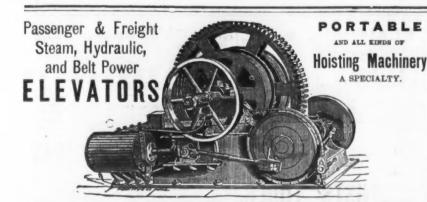
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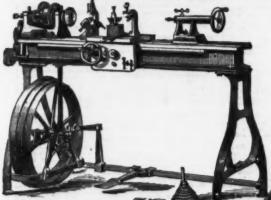
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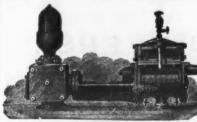
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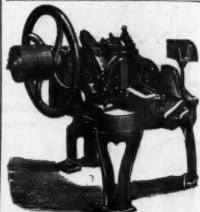
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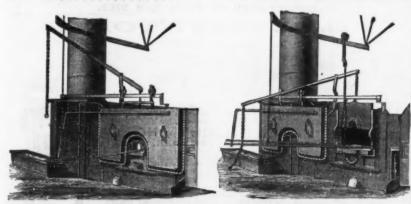
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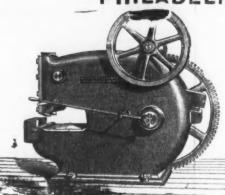
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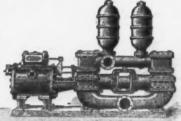
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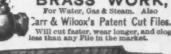
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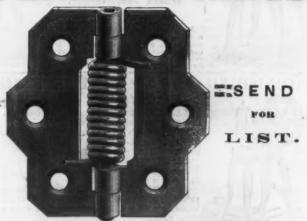
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